# ANHANG: IMPLEMENTIERUNG IN MAPLE

## 1. VARIABLEN-DEKLARATION

### A. Formel (1)

In Formel (1) (vgl. [1], p. 16) gehen die folgenden Variablen $\xi_1, \ldots, \xi_{76}$ ein:

**Tab. 1**: Formel (1)

| **Name** | **Bedeutung** | **Intervall** |
|---|---|---|
| $\xi_1, \ldots, \xi_{36}$ | Transportmengen für Gefahrengut j | $(1500, 3500)$ in Tonnen |
| $\xi_{37}, \ldots, \xi_{72}$ | Gewichtungsfaktor $\xi_{36+j}$ gehört zu Gefahrengut $j$ für $1 \leq j \leq 36$ | $\left(\frac{10}{10^2}, \frac{100}{10^2}\right)$ |
| $\xi_{73}$ | Freisetzungs-Rate pro vollen Kesselwagen | $\left(\frac{34}{10^{13}}, \frac{10^3}{10^{13}}\right)$ |
| $\xi_{74}$ | Korrekturfaktor Zuggeschwindigkeit | $\left(\frac{2}{10^2}, \frac{132}{10^2}\right)$ |
| $\xi_{75}$ | Korrekturfaktor HFO | $\left(\frac{80}{10^2}, \frac{180}{10^2}\right)$ |
| $\xi_{76}$ | Korrekturfaktor verbesserte Kesselwagen | $\left(\frac{20}{10^2}, \frac{100}{10^2}\right)$ |
| $\xi_{77}$ | Formel (4): $f_{i,\,Spur}$ | Mehrspur: $\left(\frac{1}{10^2}, \frac{100}{10^2}\right)$ Einspur: $\left(\frac{5}{10^3}, \frac{15}{10^3}\right)$ |
| $\xi_{78}$ | Anzahl Reisezüge | $\left(\frac{100}{125}, \frac{150}{125}\right)$ |

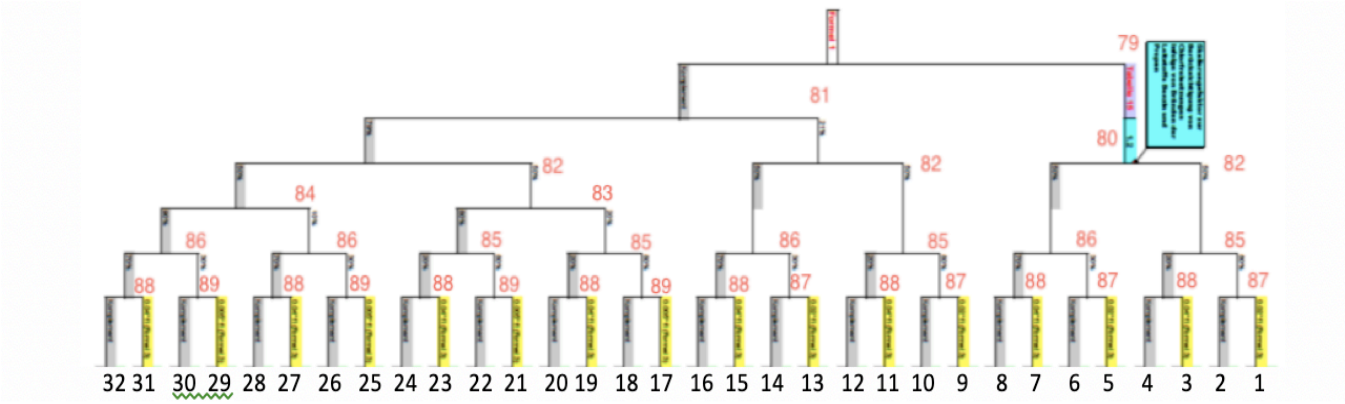
Formel (1)

$$f\left(\xi_1, \ldots, \xi_{76}\right) = \frac{1}{53} \cdot \xi_{73} \cdot \xi_{74} \cdot \xi_{75} \cdot \xi_{76} \cdot \sum_{j=1}^{36} \xi_j \cdot \xi_{36+j}$$

### B. Output-Terme

Die Output-Terme $T_1, \ldots, T_{32}$ gehören zu den schwarzen Zahlen in der unten stehenden Fig.1:

**Fig. 1**: Ereignis-Baum für Chlor (cf. [1], p.28)




Die unten stehende Tab. 2 fasst Namen, Bedeutung und Intervall der Variablen zusammen, die im Ereignis-Baum aus Fig.1 vorkommen:

**Tab. 2**: Variablen im Ereignis-Baum von Fig.1

| **Name** | **Bedeutung** | **Intervall** |
|---|---|---|
| $\xi_{79}$ | berücksichtigt Tabelle 15 für Freisetzung | spontan: $\left(\frac{5}{10^3}, \frac{80}{10^3}\right)$ |
| $\xi_{80}$ | in Fig.1 blau markierter Faktor | $\left(\frac{115}{10^2}, \frac{125}{10^2}\right)$ |
| $\xi_{81}$ | Freisetzungsmenge | $\left(\frac{20}{10^2}, \frac{22}{10^2}\right)$ |
| $\xi_{82}$ | Tag/Nacht | $\left(\frac{48}{10^2}, \frac{52}{10^2}\right)$ |
| $\xi_{83}$ | Intervention Tag (erfolgreich/nicht erfolgreich) | $\left(\frac{19}{10^2}, \frac{21}{10^2}\right)$ |
| $\xi_{84}$ | Intervention Nacht (erfolgreich/nicht erfolgreich) | $\left(\frac{95}{10^3}, \frac{105}{10^3}\right)$ |
| $\xi_{85}$ | Wind Tag | $\left(\frac{76}{10^2}, \frac{84}{10^2}\right)$ |
| | Wind Nacht | |

| | | |
|---|---|---|
| $\xi_{86}$ | | $\left(\frac{28}{10^2}, \frac{32}{10^2}\right)$ |
| $\xi_{87}$ | gelber Faktor 0.02 in Fig.1 | $\left(\frac{19}{10^3}, \frac{21}{10^3}\right)$ |
| $\xi_{88}$ | gelber Faktor 0.04 in Fig.1 | $\left(\frac{38}{10^3}, \frac{42}{10^3}\right)$ |
| $\xi_{89}$ | gelber Faktor 0.005 in Fig.1 | $\left(\frac{48}{10^4}, \frac{52}{10^4}\right)$ |
| $\xi_{90}$ | Tabelle 17: Output-Term<br>ungerader Index: Faktor $\xi_{90}$, gerader Index: Faktor $\left(1 - \xi_{90}\right)$ | $\left(\frac{46}{10^2}, \frac{100}{10'^2}\right)$ |

C. Szenarien

Die Szenarien werden durch die 64 Zeilen C1-C64 beschrieben (vgl. [1], p. 28)

Für jede der acht Spalten in Fig. 2 wählen wir eine Zufallsvariable für die Anzahl der vom Unfall betroffenen Personen:

$\xi_{91}, \ldots, \xi_{98}$ mit unterschiedlichen Gleichverteilungen

**Fig. 2**

| Evakuation gefährdeter Personen: nein / ja | 91 mittlere Letalität Freifeld 0 - 50 m | 92 mittlere Letalität Gebäude 0 - 50 m | 93 mittlere Letalität Freifeld 50 - 250 m | 94 mittlere Letalität Gebäude 50 - 250 m | 95 mittlere Letalität Freifeld 250 - 500 m | 96 mittlere Letalität Gebäude 250 - 500 m | 97 mittlere Letalität Freifeld 500 - 2'500 m | 98 mittlere Letalität Gebäude 500 - 2'500 m | Referenzausmass Reisezuginsassen (Todesopfer) | Szenarionumber |
|---|---|---|---|---|---|---|---|---|---|---|
| Tabelle 17 | 100% | 25% | 60% | 12% | 11% | 0.10% | 0.80% | 0.002% | 120 | C-1 |
| Komplement | 50% | 13% | 30% | 6.0% | 5.5% | 0.050% | 0.40% | 0.001% | 120 | C-2 |
| wie oben | 100% | 25% | 60% | 12% | 11% | 0.10% | 0.80% | 0.002% | 0 | C-3 |
| Komplement | 50% | 13% | 30% | 6.0% | 5.5% | 0.050% | 0.40% | 0.001% | 0 | C-4 |

| **Name** | **Bedeutung** | **Intervall** |
|---|---|---|
| $\xi_{91}$ | Fig.2: 1. Spalte | $(0, 80)$ |
| $\xi_{92}$ | Fig.2: 2. Spalte | $(0, 160)$ |
| $\xi_{93}$ | Fig.2: 3. Spalte | $(0, 1900)$ |

| | | |
|---|---|---|
| $\xi_{94}$ | Fig.2: 4. Spalte | $(0, 3800)$ |
| $\xi_{95}$ | Fig.2: 5. Spalte | $(0, 6000)$ |
| $\xi_{96}$ | Fig.2: 6. Spalte | $(0, 12000)$ |
| $\xi_{97}$ | Fig.2: 7. Spalte | $(0, 190000)$ |
| $\xi_{98}$ | Fig.2: 7. Spalte | $(0, 380000)$ |

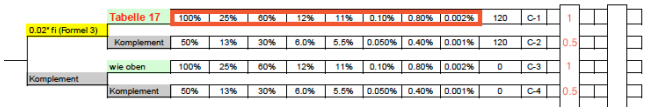
In Fig. 3 erkennen wir das folgende Muster:

Die Vorlage ist in Fig. 3 rot umrandet. Die Prozentzahlen in den Spalten der folgenden drei Zeilen ergeben sich durch die beiden Faktoren 1 und 0.5.

Dieses Muster taucht in den 64 Szenarien insgesamt 8 mal auf (vgl. [1], p. 28) . Ab C-33 reduzieren sich die Tabellen von 8 auf 6 Spalten. Die restlichen Einträge werden als harte Nullen aufegfasst.

Damit ergeben sich die gleichverteilten Zufalls-Variablen $\xi_{99}, \ldots, \xi_{154}$. Der Faktor 0.5 wird als Zufalls-Variable $\xi_{155}$ implementiert und ist ebenfalls gleichverteilt.

**Fig. 3**: M1




**Muster 1:** C-1 bis C-4

| **Name** | **Bedeutung** | **Intervall** |
|---|---|---|
| $\xi_{99}$ | Fig.4: 1. Z1, S1 | $\left(\frac{95}{10^2}, \frac{105}{10^2}\right)$ |
| $\xi_{100}$ | Fig.4: Z1, S2 | $\left(\frac{24}{10^2}, \frac{26}{10^2}\right)$ |
| $\xi_{101}$ | Fig.4: Z1, S3 | $\left(\frac{57}{10^2}, \frac{63}{10^2}\right)$ |
| $\xi_{102}$ | Fig.4: Z1, S4 | |

| | | |
|---|---|---|
| | | $\left(\frac{11}{10^2}, \frac{13}{10^2}\right)$ |
| $\xi_{103}$ | Fig.4: Z1, S5 | $\left(\frac{10}{10^2}, \frac{12}{10^2}\right)$ |
| $\xi_{104}$ | Fig.4: Z1, S6 | $\left(\frac{95}{10^5}, \frac{105}{10^5}\right)$ |
| $\xi_{105}$ | Fig.4: Z1, S7 | $\left(\frac{76}{10^4}, \frac{84}{10^4}\right)$ |
| $\xi_{106}$ | Fig.4: Z1, S8 | $\left(\frac{19}{10^5}, \frac{21}{10^5}\right)$ |

**Muster 2**: C-5 bis C-8

| **Name** | **Bedeutung** | **Intervalle** |
|---|---|---|
| $\xi_{107}$ | Fig.4: M2, S1 | $\left(\frac{95}{10^2}, \frac{105}{10^2}\right)$ |
| $\xi_{108}$ | Fig.4: M2, S2 | $\left(\frac{76}{10^2}, \frac{84}{10^2}\right)$ |
| $\xi_{109}$ | Fig.4: M2, S3 | $\left(\frac{95}{10^2}, \frac{105}{10^2}\right)$ |
| $\xi_{110}$ | Fig.4: M2, S4 | $\left(\frac{22}{10^2}, \frac{24}{10^2}\right)$ |
| $\xi_{111}$ | Fig.4: M2, S5 | $\left(\frac{93}{10^2}, \frac{103}{10^2}\right)$ |
| $\xi_{112}$ | Fig.4: M2, S6 | $\left(\frac{19}{10^2}, \frac{21}{10^2}\right)$ |
| $\xi_{113}$ | Fig.4: M2, S7 | $\left(\frac{29}{10^3}, \frac{32}{10^3}\right)$ |
| $\xi_{114}$ | Fig.4: M2, S8 | $\left(\frac{48}{10^5}, \frac{52}{10^5}\right)$ |

**Muster 1:** C-9 bis C-12

| Name | Bedeutung | Intervall |
|---|---|---|
| $\xi_{99}$ | Fig.4: M1, S1 | $\left(\frac{95}{10^2}, \frac{105}{10^2}\right)$ |
| $\xi_{100}$ | Fig.4: M1, S2 | $\left(\frac{24}{10^2}, \frac{26}{10^2}\right)$ |
| $\xi_{101}$ | Fig.4: M1, S3 | $\left(\frac{57}{10^2}, \frac{63}{10^2}\right)$ |
| $\xi_{102}$ | Fig.4: M1, S4 | $\left(\frac{11}{10^2}, \frac{13}{10^2}\right)$ |
| $\xi_{103}$ | Fig.4: M1, S5 | $\left(\frac{10}{10^2}, \frac{12}{10^2}\right)$ |
| $\xi_{104}$ | Fig.4: M1, S6 | $\left(\frac{95}{10^5}, \frac{105}{10^5}\right)$ |
| $\xi_{105}$ | Fig.4: M1, S7 | $\left(\frac{76}{10^4}, \frac{84}{10^4}\right)$ |
| $\xi_{106}$ | Fig.4: M1, S8 | $\left(\frac{19}{10^5}, \frac{21}{10^5}\right)$ |

**Muster 2**: C-13 bis C-16

| Name | Bedeutung | Intervall |
|---|---|---|
| $\xi_{107}$ | Fig.4: S1 | $\left(\frac{95}{10^2}, \frac{105}{10^2}\right)$ |
| $\xi_{108}$ | Fig.4: S2 | $\left(\frac{76}{10^2}, \frac{84}{10^2}\right)$ |
| $\xi_{109}$ | Fig.4: S3 | $\left(\frac{95}{10^2}, \frac{105}{10^2}\right)$ |
| $\xi_{110}$ | Fig.4: S4 | $\left(\frac{22}{10^2}, \frac{24}{10^2}\right)$ |
| $\xi_{111}$ | Fig.4: S5 | $\left(\frac{93}{10^2}, \frac{103}{10^2}\right)$ |
| $\xi_{112}$ | Fig.4: S6 | |

| | | |
|---|---|---|
| | | $\left(\frac{19}{10^2}, \frac{21}{10^2}\right)$ |
| $\xi_{113}$ | Fig.4: S7 | $\left(\frac{29}{10^3}, \frac{32}{10^3}\right)$ |
| $\xi_{114}$ | Fig.4: S0 | $\left(\frac{48}{10^5}, \frac{52}{10^5}\right)$ |

**Muster 3**: C-17 bis C-20

| **Name** | **Bedeutung** | **Intervall** |
|---|---|---|
| $\xi_{115}$ | Fig.4: M3, S1 | $\left(\frac{24}{10^2}, \frac{26}{10^2}\right)$ |
| $\xi_{116}$ | Fig.4: M3, S2 | $\left(\frac{57}{10^3}, \frac{63}{10^3}\right)$ |
| $\xi_{117}$ | Fig.4: M3, S3 | $\left(\frac{11}{10^2}, \frac{13}{10^2}\right)$ |
| $\xi_{118}$ | Fig.4: M3, S4 | $\left(\frac{23}{10^3}, \frac{25}{10^3}\right)$ |
| $\xi_{119}$ | Fig.4: M3, S5 | $\left(\frac{48}{10^3}, \frac{52}{10^3}\right)$ |
| $\xi_{120}$ | Fig.4: M3, S6 | $\left(\frac{95}{10^4}, \frac{105}{10^4}\right)$ |
| $\xi_{121}$ | Fig.4: M3, S7 | $\left(\frac{95}{10^5}, \frac{105}{10^5}\right)$ |
| $\xi_{122}$ | Fig.4: M3, S8 | $\left(\frac{19}{10^5}, \frac{21}{10^5}\right)$ |

**Muster 4:** C-21-C24

| **Name** | **Bedeutung** | **Intervall** |
|---|---|---|
| $\xi_{123}$ | Fig.4: M4, S1 | $\left(\frac{33}{10^2}, \frac{37}{10^2}\right)$ |
| | Fig.4: M4, S2 | |

| | | |
|---|---|---|
| $\xi_{124}$ | | $\left(\frac{67}{10^3}, \frac{73}{10^3}\right)$ |
| $\xi_{125}$ | Fig.4: M4, S3 | $\left(\frac{25}{10^2}, \frac{27}{10^2}\right)$ |
| $\xi_{126}$ | Fig.4: M4, S4 | $\left(\frac{49}{10^3}, \frac{55}{10^3}\right)$ |
| $\xi_{127}$ | Fig.4: M4, S5 | $\left(\frac{20}{10^2}, \frac{22}{10^2}\right)$ |
| $\xi_{128}$ | Fig.4: M4, S6 | $\left(\frac{40}{10^3}, \frac{44}{10^3}\right)$ |
| $\xi_{129}$ | Fig.4: M4, S7 | $\left(\frac{29}{10^3}, \frac{33}{10^3}\right)$ |
| $\xi_{130}$ | Fig.4: M4, S8 | $\left(\frac{52}{10^4}, \frac{58}{10^4}\right)$ |

**Muster 3:** C-25 bis C-28

| **Name** | **Bedeutung** | **Intervall** |
|---|---|---|
| $\xi_{115}$ | Fig.4: M3, S1 | $\left(\frac{24}{10^2}, \frac{26}{10^2}\right)$ |
| $\xi_{116}$ | Fig.4: M3, S2 | $\left(\frac{57}{10^3}, \frac{63}{10^3}\right)$ |
| $\xi_{117}$ | Fig.4: M3, S3 | $\left(\frac{11}{10^2}, \frac{13}{10^2}\right)$ |
| $\xi_{118}$ | Fig.4: M3, S4 | $\left(\frac{23}{10^3}, \frac{25}{10^3}\right)$ |
| $\xi_{119}$ | Fig.4: M3, S5 | $\left(\frac{48}{10^3}, \frac{52}{10^3}\right)$ |
| $\xi_{120}$ | Fig.4: M3, S6 | $\left(\frac{95}{10^4}, \frac{105}{10^4}\right)$ |
| $\xi_{121}$ | Fig.4: M3, S7 | $\left(\frac{95}{10^5}, \frac{105}{10^5}\right)$ |

| | | |
|---|---|---|
| $\xi_{122}$ | Fig.4: M3, S8 | $\left(\frac{19}{10^5}, \frac{21}{10^5}\right)$ |

**Muster 4:** C-29 bis C-32

| Name | Bedeutung | Intervall |
|---|---|---|
| $\xi_{123}$ | Fig.4: M4, S1 | $\left(\frac{33}{10^2}, \frac{37}{10^2}\right)$ |
| $\xi_{124}$ | Fig.4: M4, S2 | $\left(\frac{67}{10^3}, \frac{73}{10^3}\right)$ |
| $\xi_{125}$ | Fig.4: M4, S3 | $\left(\frac{25}{10^2}, \frac{27}{10^2}\right)$ |
| $\xi_{126}$ | Fig.4: M4, S4 | $\left(\frac{49}{10^3}, \frac{55}{10^3}\right)$ |
| $\xi_{127}$ | Fig.4: M4, S5 | $\left(\frac{20}{10^2}, \frac{22}{10^2}\right)$ |
| $\xi_{128}$ | Fig.4: M4, S6 | $\left(\frac{40}{10^3}, \frac{44}{10^3}\right)$ |
| $\xi_{129}$ | Fig.4: M4, S7 | $\left(\frac{29}{10^3}, \frac{33}{10^3}\right)$ |
| $\xi_{130}$ | Fig.4: M4, S8 | $\left(\frac{52}{10^4}, \frac{58}{10^4}\right)$ |

**Muster 5:** C-33 bis C-36

| Name | Bedeutung | Intervall |
|---|---|---|
| $\xi_{131}$ | Fig.4: M5, S1 | $\left(\frac{57}{10^3}, \frac{63}{10^3}\right)$ |
| $\xi_{132}$ | Fig.4: M5, S2 | $\left(\frac{14}{10^3}, \frac{16}{10^3}\right)$ |
| $\xi_{133}$ | Fig.4: M5, S3 | $\left(\frac{10}{10^3}, \frac{12}{10^3}\right)$ |
| | Fig.4: M5, S4 | |

| | | |
|---|---|---|
| $\xi_{134}$ | | $\left(\frac{29}{10^4}, \frac{32}{10^4}\right)$ |
| $\xi_{135}$ | Fig.4: M5, S5 | $\left(\frac{19}{10^4}, \frac{21}{10^4}\right)$ |
| $\xi_{136}$ | Fig.4: M5, S6 | $\left(\frac{57}{10^5}, \frac{63}{10^5}\right)$ |

**Muster 6:** C-37 bis C-40

| **Name** | **Bedeutung** | **Intervall** |
|---|---|---|
| $\xi_{137}$ | Fig.4: M6, S1 | $\left(\frac{28}{10^2}, \frac{32}{10^2}\right)$ |
| $\xi_{138}$ | Fig.4: M6, S2 | $\left(\frac{48}{10^3}, \frac{52}{10^3}\right)$ |
| $\xi_{139}$ | Fig.4: M6, S3 | $\left(\frac{15}{10^2}, \frac{17}{10^2}\right)$ |
| $\xi_{140}$ | Fig.4: M6, S4 | $\left(\frac{22}{10^3}, \frac{24}{10^3}\right)$ |
| $\xi_{141}$ | Fig.4: M6, S5 | $\left(\frac{38}{10^3}, \frac{42}{10^3}\right)$ |
| $\xi_{142}$ | Fig.4: M6, S6 | $\left(\frac{28}{10^4}, \frac{32}{10^4}\right)$ |

**Muster 7:** C-41 bis C-44

| **Name** | **Bedeutung** | **Intervall** |
|---|---|---|
| $\xi_{143}$ | Fig.4: M7, S1 | $\left(\frac{76}{10^3}, \frac{84}{103}\right)$ |
| $\xi_{144}$ | Fig.4: M7, S2 | $\left(\frac{36}{10^3}, \frac{40}{10^3}\right)$ |
| $\xi_{145}$ | Fig.4: M7, S3 | $\left(\frac{14}{10^3}, \frac{16}{10^3}\right)$ |
| | Fig.4: M7, S4 | |

| | | |
|---|---|---|
| $\xi_{146}$ | | $\left(\frac{76}{10^4}, \frac{84}{10^4}\right)$ |
| $\xi_{147}$ | Fig.4: M7, S5 | $\left(\frac{26}{10^4}, \frac{28}{10^4}\right)$ |
| $\xi_{148}$ | Fig.4: M7, S6 | $\left(\frac{14}{10^4}, \frac{16}{10^4}\right)$ |

**Muster 8**: C-45 bis C-48

| **Name** | **Bedeutung** | **Intervall** |
|---|---|---|
| $\xi_{149}$ | Fig.4: M8, S1 | $\left(\frac{66}{10^2}, \frac{72}{10^2}\right)$ |
| $\xi_{150}$ | Fig.4: M8, S2 | $\left(\frac{39}{10^2}, \frac{43}{10^2}\right)$ |
| $\xi_{151}$ | Fig.4: M8, S3 | $\left(\frac{35}{10^2}, \frac{39}{10^2}\right)$ |
| $\xi_{152}$ | Fig.4: M8, S4 | $\left(\frac{18}{10^2}, \frac{20}{10^2}\right)$ |
| $\xi_{153}$ | Fig.4: M8, S5 | $\left(\frac{87}{10^3}, \frac{97}{10^3}\right)$ |
| $\xi_{154}$ | Fig.4: M8, S6 | $\left(\frac{23}{10^3}, \frac{25}{10^3}\right)$ |

**Muster 5:** C-49 bis C-52

| **Name** | **Bedeutung** | **Intervall** |
|---|---|---|
| $\xi_{131}$ | Fig.4: M5, S1 | $\left(\frac{57}{10^3}, \frac{63}{10^3}\right)$ |
| $\xi_{132}$ | Fig.4: M5, S2 | $\left(\frac{14}{10^3}, \frac{16}{10^3}\right)$ |
| $\xi_{133}$ | Fig.4: M5, S3 | $\left(\frac{10}{10^3}, \frac{12}{10^3}\right)$ |
| $\xi_{134}$ | Fig.4: M5, S4 | |

| | | |
|---|---|---|
| | | $\left(\frac{29}{10^4}, \frac{32}{10^4}\right)$ |
| $\xi_{135}$ | Fig.4: M5, S5 | $\left(\frac{19}{10^4}, \frac{21}{10^4}\right)$ |
| $\xi_{136}$ | Fig.4: M5, S6 | $\left(\frac{57}{10^5}, \frac{63}{10^5}\right)$ |

**Muster 6:** C-53 bis C-56

| **Name** | **Bedeutung** | **Intervall** |
|---|---|---|
| $\xi_{137}$ | Fig.4: M6, S1 | $\left(\frac{28}{10^2}, \frac{32}{10^2}\right)$ |
| $\xi_{138}$ | Fig.4: M6, S2 | $\left(\frac{48}{10^3}, \frac{52}{10^3}\right)$ |
| $\xi_{139}$ | Fig.4: M6, S3 | $\left(\frac{15}{10^2}, \frac{17}{10^2}\right)$ |
| $\xi_{140}$ | Fig.4: M6, S4 | $\left(\frac{22}{10^3}, \frac{24}{10^3}\right)$ |
| $\xi_{141}$ | Fig.4: M6, S5 | $\left(\frac{38}{10^3}, \frac{42}{10^3}\right)$ |
| $\xi_{142}$ | Fig.4: M6, S6 | $\left(\frac{28}{10^4}, \frac{32}{10^4}\right)$ |

**Muster 7:** C-57 bis C-60

| **Name** | **Bedeutung** | **Intervall** |
|---|---|---|
| $\xi_{143}$ | Fig.4: M7, S1 | $\left(\frac{76}{10^3}, \frac{84}{103}\right)$ |
| $\xi_{144}$ | Fig.4: M7, S2 | $\left(\frac{36}{10^3}, \frac{40}{10^3}\right)$ |
| $\xi_{145}$ | Fig.4: M7, S3 | $\left(\frac{14}{10^3}, \frac{16}{10^3}\right)$ |
| $\xi_{146}$ | Fig.4: M7, S4 | $\left(\frac{76}{10^4}, \frac{84}{10^4}\right)$ |

| | | |
|---|---|---|
| $\xi_{147}$ | Fig.4: M7, S5 | $\left(\frac{26}{10^4}, \frac{28}{10^4}\right)$ |
| $\xi_{148}$ | Fig.4: M7, S6 | $\left(\frac{14}{10^4}, \frac{16}{10^4}\right)$ |

**Muster 8:** C-61 bis C-64

| **Name** | **Bedeutung** | **Intervall** |
|---|---|---|
| $\xi_{149}$ | Fig.4: M8, S1 | $\left(\frac{66}{10^2}, \frac{72}{10^2}\right)$ |
| $\xi_{150}$ | Fig.4: M8, S2 | $\left(\frac{39}{10^2}, \frac{43}{10^2}\right)$ |
| $\xi_{151}$ | Fig.4: M8, S3 | $\left(\frac{35}{10^2}, \frac{39}{10^2}\right)$ |
| $\xi_{152}$ | Fig.4: M8, S4 | $\left(\frac{18}{10^2}, \frac{20}{10^2}\right)$ |
| $\xi_{153}$ | Fig.4: M8, S5 | $\left(\frac{87}{10^3}, \frac{97}{10^3}\right)$ |
| $\xi_{154}$ | Fig.4: M8, S6 | $\left(\frac{23}{10^3}, \frac{25}{10^3}\right)$ |

D. Faktoren in Mustern

| **Name** | **Bedeutung** | **Intervall** |
|---|---|---|
| $\xi_{155}$ | $\approx 0.5$ in Zeilen (Fig.4) | $\left(\frac{48}{10^2}, \frac{52}{10^2}\right)$ |

2. LISTE: OUTPUT-TERME IM EREIGNISBAUM

Hier wird die explizite Form aller 32 Output-Terme aufgeführt:

$$T_1 = \xi_{79}\,\xi_{80}\,\xi_{82}\,\xi_{85}\,\xi_{87}\,\xi_{78}\,\xi_{77}$$
$$T_2 = \xi_{79}\,\xi_{80}\,\xi_{82}\,\xi_{85}\left(-\xi_{77}\,\xi_{78}\,\xi_{87}+1\right)$$
$$T_3 = \xi_{79}\,\xi_{80}\,\xi_{82}\left(1-\xi_{85}\right)\xi_{88}\,\xi_{78}\,\xi_{77}$$

$$T_4 = \xi_{79}\,\xi_{80}\,\xi_{82}\,\left(1-\xi_{85}\right)\,\left(-\xi_{77}\,\xi_{78}\,\xi_{88}+1\right)$$
$$T_5 = \xi_{79}\,\xi_{80}\,\left(1-\xi_{82}\right)\,\xi_{86}\,\xi_{87}\,\xi_{78}\,\xi_{77}$$
$$T_6 = \xi_{79}\,\xi_{80}\,\left(1-\xi_{82}\right)\,\xi_{86}\,\left(-\xi_{77}\,\xi_{78}\,\xi_{87}+1\right)$$
$$T_7 = \xi_{79}\,\xi_{80}\,\left(1-\xi_{82}\right)\,\left(1-\xi_{86}\right)\,\xi_{88}\,\xi_{78}\,\xi_{77}$$
$$T_8 = \xi_{79}\,\xi_{80}\,\left(1-\xi_{82}\right)\,\left(1-\xi_{86}\right)\,\left(-\xi_{77}\,\xi_{78}\,\xi_{88}+1\right)$$
$$T_9 = \left(1-\xi_{79}\right)\,\xi_{81}\,\xi_{82}\,\xi_{85}\,\xi_{87}\,\xi_{78}\,\xi_{77}$$
$$T_{10} = \left(1-\xi_{79}\right)\,\xi_{81}\,\xi_{82}\,\xi_{85}\,\left(-\xi_{77}\,\xi_{78}\,\xi_{87}+1\right)$$
$$T_{11} = \left(1-\xi_{79}\right)\,\xi_{81}\,\xi_{82}\,\left(1-\xi_{85}\right)\,\xi_{88}\,\xi_{78}\,\xi_{77}$$
$$T_{12} = \left(1-\xi_{79}\right)\,\xi_{81}\,\xi_{82}\,\left(1-\xi_{85}\right)\,\left(-\xi_{77}\,\xi_{78}\,\xi_{88}+1\right)$$
$$T_{13} = \left(1-\xi_{79}\right)\,\xi_{81}\,\left(1-\xi_{82}\right)\,\xi_{86}\,\xi_{87}\,\xi_{78}\,\xi_{77}$$
$$T_{14} = \left(1-\xi_{79}\right)\,\xi_{81}\,\left(1-\xi_{82}\right)\,\xi_{86}\,\left(-\xi_{77}\,\xi_{78}\,\xi_{87}+1\right)$$
$$T_{15} = \left(1-\xi_{79}\right)\,\xi_{81}\,\left(1-\xi_{82}\right)\,\left(1-\xi_{86}\right)\,\xi_{88}\,\xi_{78}\,\xi_{77}$$
$$T_{16} = \left(1-\xi_{79}\right)\,\xi_{81}\,\left(1-\xi_{82}\right)\,\left(1-\xi_{86}\right)\,\left(-\xi_{77}\,\xi_{78}\,\xi_{88}+1\right)$$
$$T_{17} = \left(1-\xi_{79}\right)\,\left(1-\xi_{81}\right)\,\xi_{82}\,\xi_{83}\,\xi_{85}\,\xi_{89}\,\xi_{78}\,\xi_{77}$$
$$T_{18} = \left(1-\xi_{79}\right)\,\left(1-\xi_{81}\right)\,\xi_{82}\,\xi_{83}\,\xi_{85}\,\left(-\xi_{77}\,\xi_{78}\,\xi_{89}+1\right)$$
$$T_{19} = \left(1-\xi_{79}\right)\,\left(1-\xi_{81}\right)\,\xi_{82}\,\xi_{83}\,\left(1-\xi_{85}\right)\,\xi_{88}\,\xi_{78}\,\xi_{77}$$
$$T_{20} = \left(1-\xi_{79}\right)\,\left(1-\xi_{81}\right)\,\xi_{82}\,\xi_{83}\,\left(1-\xi_{85}\right)\,\left(-\xi_{77}\,\xi_{78}\,\xi_{88}+1\right)$$
$$T_{21} = \left(1-\xi_{79}\right)\,\left(1-\xi_{81}\right)\,\xi_{82}\,\left(1-\xi_{83}\right)\,\xi_{85}\,\xi_{89}\,\xi_{78}\,\xi_{77}$$
$$T_{22} = \left(1-\xi_{79}\right)\,\left(1-\xi_{81}\right)\,\xi_{82}\,\left(1-\xi_{83}\right)\,\xi_{85}\,\left(-\xi_{77}\,\xi_{78}\,\xi_{89}+1\right)$$
$$T_{23} = \left(1-\xi_{79}\right)\,\left(1-\xi_{81}\right)\,\xi_{82}\,\left(1-\xi_{83}\right)\,\left(1-\xi_{85}\right)\,\xi_{88}\,\xi_{78}\,\xi_{77}$$
$$T_{24} = \left(1-\xi_{79}\right)\,\left(1-\xi_{81}\right)\,\xi_{82}\,\left(1-\xi_{83}\right)\,\left(1-\xi_{85}\right)\,\left(-\xi_{77}\,\xi_{78}\,\xi_{88}+1\right)$$
$$T_{25} = \left(1-\xi_{79}\right)\,\left(1-\xi_{81}\right)\,\left(1-\xi_{82}\right)\,\xi_{84}\,\xi_{86}\,\xi_{89}\,\xi_{78}\,\xi_{77}$$
$$T_{26} = \left(1-\xi_{79}\right)\,\left(1-\xi_{81}\right)\,\left(1-\xi_{82}\right)\,\xi_{84}\,\xi_{86}\,\left(-\xi_{77}\,\xi_{78}\,\xi_{89}+1\right)$$
$$T_{27} = \left(1-\xi_{79}\right)\,\left(1-\xi_{81}\right)\,\left(1-\xi_{82}\right)\,\xi_{84}\,\left(1-\xi_{86}\right)\,\xi_{88}\,\xi_{78}\,\xi_{77}$$
$$T_{28} = \left(1-\xi_{79}\right)\,\left(1-\xi_{81}\right)\,\left(1-\xi_{82}\right)\,\xi_{84}\,\left(1-\xi_{86}\right)\,\left(-\xi_{77}\,\xi_{78}\,\xi_{88}+1\right)$$
$$T_{29} = \left(1-\xi_{79}\right)\,\left(1-\xi_{81}\right)\,\left(1-\xi_{82}\right)\,\left(1-\xi_{84}\right)\,\xi_{86}\,\xi_{89}\,\xi_{78}\,\xi_{77}$$
$$T_{30} = \left(1-\xi_{79}\right)\,\left(1-\xi_{81}\right)\,\left(1-\xi_{82}\right)\,\left(1-\xi_{84}\right)\,\xi_{86}\,\left(-\xi_{77}\,\xi_{78}\,\xi_{89}+1\right)$$
$$T_{31} = \left(1-\xi_{79}\right)\,\left(1-\xi_{81}\right)\,\left(1-\xi_{82}\right)\,\left(1-\xi_{84}\right)\,\left(1-\xi_{86}\right)\,\xi_{88}\,\xi_{78}\,\xi_{77}$$
$$T_{32} = \left(1-\xi_{79}\right)\,\left(1-\xi_{81}\right)\,\left(1-\xi_{82}\right)\,\left(1-\xi_{84}\right)\,\left(1-\xi_{86}\right)\,\left(-\xi_{77}\,\xi_{78}\,\xi_{88}+1\right)$$

3. LISTE: SZENARIEN

Die 64 Szenarien besitzen die folgenden Gestalten:

$$SZ_1 = \xi_{79}\,\xi_{80}\,\xi_{82}\,\xi_{85}\,\xi_{87}\,\xi_{78}\,\xi_{77}\,\xi_{90}\,\left(\xi_{91}\,\xi_{99} + \xi_{92}\,\xi_{100} + \xi_{93}\,\xi_{101} + \xi_{94}\,\xi_{102} + \xi_{95}\,\xi_{103} + \xi_{96}\,\xi_{104} + \xi_{97}\,\xi_{105} + \xi_{98}\,\xi_{106} + 120\right)$$

$$SZ_2 = \xi_{79}\,\xi_{80}\,\xi_{82}\,\xi_{85}\,\xi_{87}\,\xi_{78}\,\xi_{77}\,\left(1 - \xi_{90}\right)\,\xi_{155}\,\left(\xi_{91}\,\xi_{99} + \xi_{92}\,\xi_{100} + \xi_{93}\,\xi_{101} + \xi_{94}\,\xi_{102} + \xi_{95}\,\xi_{103} + \xi_{96}\,\xi_{104} + \xi_{97}\,\xi_{105} + \xi_{98}\,\xi_{106} + 120\right)$$

$$SZ_3 = \xi_{79}\,\xi_{80}\,\xi_{82}\,\xi_{85}\,\left(-\xi_{77}\,\xi_{78}\,\xi_{87} + 1\right)\,\xi_{90}\,\left(\xi_{91}\,\xi_{99} + \xi_{92}\,\xi_{100} + \xi_{93}\,\xi_{101} + \xi_{94}\,\xi_{102} + \xi_{95}\,\xi_{103} + \xi_{96}\,\xi_{104} + \xi_{97}\,\xi_{105} + \xi_{98}\,\xi_{106}\right)$$

$$SZ_4 = \xi_{79}\,\xi_{80}\,\xi_{82}\,\xi_{85}\,\left(-\xi_{77}\,\xi_{78}\,\xi_{87} + 1\right)\,\left(1 - \xi_{90}\right)\,\xi_{155}\,\left(\xi_{91}\,\xi_{99} + \xi_{92}\,\xi_{100} + \xi_{93}\,\xi_{101} + \xi_{94}\,\xi_{102} + \xi_{95}\,\xi_{103} + \xi_{96}\,\xi_{104} + \xi_{97}\,\xi_{105} + \xi_{98}\,\xi_{106}\right)$$

$$SZ_5 = \xi_{79}\,\xi_{80}\,\xi_{82}\,\left(1 - \xi_{85}\right)\,\xi_{88}\,\xi_{78}\,\xi_{77}\,\xi_{90}\,\left(\xi_{91}\,\xi_{107} + \xi_{92}\,\xi_{108} + \xi_{93}\,\xi_{109} + \xi_{94}\,\xi_{110} + \xi_{95}\,\xi_{111} + \xi_{96}\,\xi_{112} + \xi_{97}\,\xi_{113} + \xi_{98}\,\xi_{114} + 120\right)$$

$$SZ_6 = \xi_{79}\,\xi_{80}\,\xi_{82}\,\left(1 - \xi_{85}\right)\,\xi_{88}\,\xi_{78}\,\xi_{77}\,\left(1 - \xi_{90}\right)\,\xi_{155}\,\left(\xi_{91}\,\xi_{107} + \xi_{92}\,\xi_{108} + \xi_{93}\,\xi_{109} + \xi_{94}\,\xi_{110} + \xi_{95}\,\xi_{111} + \xi_{96}\,\xi_{112} + \xi_{97}\,\xi_{113} + \xi_{98}\,\xi_{114} + 120\right)$$

$$SZ_7 = \xi_{79}\,\xi_{80}\,\xi_{82}\,\left(1 - \xi_{85}\right)\,\left(-\xi_{77}\,\xi_{78}\,\xi_{88} + 1\right)\,\xi_{90}\,\left(\xi_{91}\,\xi_{107} + \xi_{92}\,\xi_{108} + \xi_{93}\,\xi_{109} + \xi_{94}\,\xi_{110} + \xi_{95}\,\xi_{111} + \xi_{96}\,\xi_{112} + \xi_{97}\,\xi_{113} + \xi_{98}\,\xi_{114}\right)$$

$$SZ_8 = \xi_{79}\,\xi_{80}\,\xi_{82}\,\left(1 - \xi_{85}\right)\,\left(-\xi_{77}\,\xi_{78}\,\xi_{88} + 1\right)\,\left(1 - \xi_{90}\right)\,\xi_{155}\,\left(\xi_{91}\,\xi_{107} + \xi_{92}\,\xi_{108} + \xi_{93}\,\xi_{109} + \xi_{94}\,\xi_{110} + \xi_{95}\,\xi_{111} + \xi_{96}\,\xi_{112} + \xi_{97}\,\xi_{113} + \xi_{98}\,\xi_{114}\right)$$

$$SZ_9 = \xi_{79}\,\xi_{80}\,\left(1 - \xi_{82}\right)\,\xi_{86}\,\xi_{87}\,\xi_{78}\,\xi_{77}\,\xi_{90}\,\left(\xi_{91}\,\xi_{99} + \xi_{92}\,\xi_{100} + \xi_{93}\,\xi_{101} + \xi_{94}\,\xi_{102} + \xi_{95}\,\xi_{103} + \xi_{96}\,\xi_{104} + \xi_{97}\,\xi_{105} + \xi_{98}\,\xi_{106} + 120\right)$$

$$SZ_{10} = \xi_{79}\,\xi_{80}\,\left(1 - \xi_{82}\right)\,\xi_{86}\,\xi_{87}\,\xi_{78}\,\xi_{77}\,\left(1 - \xi_{90}\right)\,\xi_{155}\,\left(\xi_{91}\,\xi_{99} + \xi_{92}\,\xi_{100} + \xi_{93}\,\xi_{101} + \xi_{94}\,\xi_{102} + \xi_{95}\,\xi_{103} + \xi_{96}\,\xi_{104} + \xi_{97}\,\xi_{105} + \xi_{98}\,\xi_{106} + 120\right)$$

$$SZ_{11} = \xi_{79}\,\xi_{80}\,\left(1 - \xi_{82}\right)\,\xi_{86}\,\left(-\xi_{77}\,\xi_{78}\,\xi_{87} + 1\right)\,\xi_{90}\,\left(\xi_{91}\,\xi_{99} + \xi_{92}\,\xi_{100} + \xi_{93}\,\xi_{101} + \xi_{94}\,\xi_{102} + \xi_{95}\,\xi_{103} + \xi_{96}\,\xi_{104} + \xi_{97}\,\xi_{105} + \xi_{98}\,\xi_{106}\right)$$

$$SZ_{12} = \xi_{79}\,\xi_{80}\,\left(1 - \xi_{82}\right)\,\xi_{86}\,\left(-\xi_{77}\,\xi_{78}\,\xi_{87} + 1\right)\,\left(1 - \xi_{90}\right)\,\xi_{155}\,\left(\xi_{91}\,\xi_{99} + \xi_{92}\,\xi_{100} + \xi_{93}\,\xi_{101} + \xi_{94}\,\xi_{102} + \xi_{95}\,\xi_{103} + \xi_{96}\,\xi_{104} + \xi_{97}\,\xi_{105} + \xi_{98}\,\xi_{106}\right)$$

$$SZ_{13} = \xi_{79}\,\xi_{80}\,\left(1 - \xi_{82}\right)\,\left(1 - \xi_{86}\right)\,\xi_{88}\,\xi_{78}\,\xi_{77}\,\xi_{90}\,\left(\xi_{91}\,\xi_{107} + \xi_{92}\,\xi_{108} + \xi_{93}\,\xi_{109} + \xi_{94}\,\xi_{110} + \xi_{95}\,\xi_{111} + \xi_{96}\,\xi_{112} + \xi_{97}\,\xi_{113} + \xi_{98}\,\xi_{114} + 120\right)$$

$$SZ_{14} = \xi_{79}\,\xi_{80}\,\left(1 - \xi_{82}\right)\,\left(1 - \xi_{86}\right)\,\xi_{88}\,\xi_{78}\,\xi_{77}\,\left(1 - \xi_{90}\right)\,\xi_{155}\,\left(\xi_{91}\,\xi_{107} + \xi_{92}\,\xi_{108} + \xi_{93}\,\xi_{109} + \xi_{94}\,\xi_{110} + \xi_{95}\,\xi_{111} + \xi_{96}\,\xi_{112} + \xi_{97}\,\xi_{113} + \xi_{98}\,\xi_{114} + 120\right)$$

$$SZ_{15} = \xi_{79}\,\xi_{80}\,\left(1 - \xi_{82}\right)\,\left(1 - \xi_{86}\right)\,\left(-\xi_{77}\,\xi_{78}\,\xi_{88} + 1\right)\,\xi_{90}\,\left(\xi_{91}\,\xi_{107} + \xi_{92}\,\xi_{108} + \xi_{93}\,\xi_{109} + \xi_{94}\,\xi_{110} + \xi_{95}\,\xi_{111} + \xi_{96}\,\xi_{112} + \xi_{97}\,\xi_{113} + \xi_{98}\,\xi_{114}\right)$$

$$SZ_{16} = \xi_{79}\,\xi_{80}\,\left(1 - \xi_{82}\right)\,\left(1 - \xi_{86}\right)\,\left(-\xi_{77}\,\xi_{78}\,\xi_{88} + 1\right)\,\left(1 - \xi_{90}\right)\,\xi_{155}\,\left(\xi_{91}\,\xi_{107} + \xi_{92}\,\xi_{108} + \xi_{93}\,\xi_{109} + \xi_{94}\,\xi_{110} + \xi_{95}\,\xi_{111} + \xi_{96}\,\xi_{112} + \xi_{97}\,\xi_{113} + \xi_{98}\,\xi_{114}\right)$$

$$SZ_{17} = \left(1 - \xi_{79}\right)\,\xi_{81}\,\xi_{82}\,\xi_{85}\,\xi_{87}\,\xi_{78}\,\xi_{77}\,\xi_{90}\,\left(\xi_{91}\,\xi_{115} + \xi_{92}\,\xi_{116} + \xi_{93}\,\xi_{117} + \xi_{94}\,\xi_{118} + \xi_{95}\,\xi_{119} + \xi_{96}\,\xi_{120} + \xi_{97}\,\xi_{121} + \xi_{98}\,\xi_{122} + 120\right)$$

$$SZ_{18} = \left(1-\xi_{79}\right)\xi_{81}\,\xi_{82}\,\xi_{85}\,\xi_{87}\,\xi_{78}\,\xi_{77}\left(1-\xi_{90}\right)\xi_{155}\left(\xi_{91}\,\xi_{115}+\xi_{92}\,\xi_{116}+\xi_{93}\,\xi_{117}+\xi_{94}\,\xi_{118}+\xi_{95}\,\xi_{119}+\xi_{96}\,\xi_{120}+\xi_{97}\,\xi_{121}+\xi_{98}\,\xi_{122}+120\right)$$

$$SZ_{19} = \left(1-\xi_{79}\right)\xi_{81}\,\xi_{82}\,\xi_{85}\left(-\xi_{77}\,\xi_{78}\,\xi_{87}+1\right)\xi_{90}\left(\xi_{91}\,\xi_{115}+\xi_{92}\,\xi_{116}+\xi_{93}\,\xi_{117}+\xi_{94}\,\xi_{118}+\xi_{95}\,\xi_{119}+\xi_{96}\,\xi_{120}+\xi_{97}\,\xi_{121}+\xi_{98}\,\xi_{122}\right)$$

$$SZ_{20} = \left(1-\xi_{79}\right)\xi_{81}\,\xi_{82}\,\xi_{85}\left(-\xi_{77}\,\xi_{78}\,\xi_{87}+1\right)\left(1-\xi_{90}\right)\xi_{155}\left(\xi_{91}\,\xi_{115}+\xi_{92}\,\xi_{116}+\xi_{93}\,\xi_{117}+\xi_{94}\,\xi_{118}+\xi_{95}\,\xi_{119}+\xi_{96}\,\xi_{120}+\xi_{97}\,\xi_{121}+\xi_{98}\,\xi_{122}\right)$$

$$SZ_{21} = \left(1-\xi_{79}\right)\xi_{81}\,\xi_{82}\left(1-\xi_{85}\right)\xi_{88}\,\xi_{78}\,\xi_{77}\,\xi_{90}\left(\xi_{91}\,\xi_{123}+\xi_{92}\,\xi_{124}+\xi_{93}\,\xi_{125}+\xi_{94}\,\xi_{126}+\xi_{95}\,\xi_{127}+\xi_{96}\,\xi_{128}+\xi_{97}\,\xi_{129}+\xi_{98}\,\xi_{130}+120\right)$$

$$SZ_{22} = \left(1-\xi_{79}\right)\xi_{81}\,\xi_{82}\left(1-\xi_{85}\right)\xi_{88}\,\xi_{78}\,\xi_{77}\left(1-\xi_{90}\right)\xi_{155}\left(\xi_{91}\,\xi_{123}+\xi_{92}\,\xi_{124}+\xi_{93}\,\xi_{125}+\xi_{94}\,\xi_{126}+\xi_{95}\,\xi_{127}+\xi_{96}\,\xi_{128}+\xi_{97}\,\xi_{129}+\xi_{98}\,\xi_{130}+120\right)$$

$$SZ_{23} = \left(1-\xi_{79}\right)\xi_{81}\,\xi_{82}\left(1-\xi_{85}\right)\left(-\xi_{77}\,\xi_{78}\,\xi_{88}+1\right)\xi_{90}\left(\xi_{91}\,\xi_{123}+\xi_{92}\,\xi_{124}+\xi_{93}\,\xi_{125}+\xi_{94}\,\xi_{126}+\xi_{95}\,\xi_{127}+\xi_{96}\,\xi_{128}+\xi_{97}\,\xi_{129}+\xi_{98}\,\xi_{130}\right)$$

$$SZ_{24} = \left(1-\xi_{79}\right)\xi_{81}\,\xi_{82}\left(1-\xi_{85}\right)\left(-\xi_{77}\,\xi_{78}\,\xi_{88}+1\right)\left(1-\xi_{90}\right)\xi_{155}\left(\xi_{91}\,\xi_{123}+\xi_{92}\,\xi_{124}+\xi_{93}\,\xi_{125}+\xi_{94}\,\xi_{126}+\xi_{95}\,\xi_{127}+\xi_{96}\,\xi_{128}+\xi_{97}\,\xi_{129}+\xi_{98}\,\xi_{130}\right)$$

$$SZ_{25} = \left(1-\xi_{79}\right)\xi_{81}\left(1-\xi_{82}\right)\xi_{86}\,\xi_{87}\,\xi_{78}\,\xi_{77}\,\xi_{90}\left(\xi_{91}\,\xi_{115}+\xi_{92}\,\xi_{116}+\xi_{93}\,\xi_{117}+\xi_{94}\,\xi_{118}+\xi_{95}\,\xi_{119}+\xi_{96}\,\xi_{120}+\xi_{97}\,\xi_{121}+\xi_{98}\,\xi_{122}+120\right)$$

$$SZ_{26} = \left(1-\xi_{79}\right)\xi_{81}\left(1-\xi_{82}\right)\xi_{86}\,\xi_{87}\,\xi_{78}\,\xi_{77}\left(1-\xi_{90}\right)\xi_{155}\left(\xi_{91}\,\xi_{115}+\xi_{92}\,\xi_{116}+\xi_{93}\,\xi_{117}+\xi_{94}\,\xi_{118}+\xi_{95}\,\xi_{119}+\xi_{96}\,\xi_{120}+\xi_{97}\,\xi_{121}+\xi_{98}\,\xi_{122}+120\right)$$

$$SZ_{27} = \left(1-\xi_{79}\right)\xi_{81}\left(1-\xi_{82}\right)\xi_{86}\left(-\xi_{77}\,\xi_{78}\,\xi_{87}+1\right)\xi_{90}\left(\xi_{91}\,\xi_{115}+\xi_{92}\,\xi_{116}+\xi_{93}\,\xi_{117}+\xi_{94}\,\xi_{118}+\xi_{95}\,\xi_{119}+\xi_{96}\,\xi_{120}+\xi_{97}\,\xi_{121}+\xi_{98}\,\xi_{122}\right)$$

$$SZ_{28} = \left(1-\xi_{79}\right)\xi_{81}\left(1-\xi_{82}\right)\xi_{86}\left(-\xi_{77}\,\xi_{78}\,\xi_{87}+1\right)\left(1-\xi_{90}\right)\xi_{155}\left(\xi_{91}\,\xi_{115}+\xi_{92}\,\xi_{116}+\xi_{93}\,\xi_{117}+\xi_{94}\,\xi_{118}+\xi_{95}\,\xi_{119}+\xi_{96}\,\xi_{120}+\xi_{97}\,\xi_{121}+\xi_{98}\,\xi_{122}\right)$$

$$SZ_{29} = \left(1-\xi_{79}\right)\xi_{81}\left(1-\xi_{82}\right)\left(1-\xi_{86}\right)\xi_{88}\,\xi_{78}\,\xi_{77}\,\xi_{90}\left(\xi_{91}\,\xi_{123}+\xi_{92}\,\xi_{124}+\xi_{93}\,\xi_{125}+\xi_{94}\,\xi_{126}+\xi_{95}\,\xi_{127}+\xi_{96}\,\xi_{128}+\xi_{97}\,\xi_{129}+\xi_{98}\,\xi_{130}+120\right)$$

$$SZ_{30} = \left(1-\xi_{79}\right)\xi_{81}\left(1-\xi_{82}\right)\left(1-\xi_{86}\right)\xi_{88}\,\xi_{78}\,\xi_{77}\left(1-\xi_{90}\right)\xi_{155}\left(\xi_{91}\,\xi_{123}+\xi_{92}\,\xi_{124}+\xi_{93}\,\xi_{125}+\xi_{94}\,\xi_{126}+\xi_{95}\,\xi_{127}+\xi_{96}\,\xi_{128}+\xi_{97}\,\xi_{129}+\xi_{98}\,\xi_{130}+120\right)$$

$$SZ_{31} = \left(1-\xi_{79}\right)\xi_{81}\left(1-\xi_{82}\right)\left(1-\xi_{86}\right)\left(-\xi_{77}\,\xi_{78}\,\xi_{88}+1\right)\xi_{90}\left(\xi_{91}\,\xi_{123}+\xi_{92}\,\xi_{124}+\xi_{93}\,\xi_{125}+\xi_{94}\,\xi_{126}+\xi_{95}\,\xi_{127}+\xi_{96}\,\xi_{128}+\xi_{97}\,\xi_{129}+\xi_{98}\,\xi_{130}\right)$$

$$SZ_{32} = \left(1-\xi_{79}\right)\xi_{81}\left(1-\xi_{82}\right)\left(1-\xi_{86}\right)\left(-\xi_{77}\,\xi_{78}\,\xi_{88}+1\right)\left(1-\xi_{90}\right)\xi_{155}\left(\xi_{91}\,\xi_{123}+\xi_{92}\,\xi_{124}+\xi_{93}\,\xi_{125}+\xi_{94}\,\xi_{126}+\xi_{95}\,\xi_{127}+\xi_{96}\,\xi_{128}+\xi_{97}\,\xi_{129}+\xi_{98}\,\xi_{130}\right)$$

$$SZ_{33} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\xi_{82}\,\xi_{83}\,\xi_{85}\,\xi_{89}\,\xi_{78}\,\xi_{77}\,\xi_{90}\left(\xi_{91}\,\xi_{131}+\xi_{92}\,\xi_{132}+\xi_{93}\,\xi_{133}+\xi_{94}\,\xi_{134}+\xi_{95}\,\xi_{135}+\xi_{96}\,\xi_{136}+62\right)$$

$$SZ_{34} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\xi_{82}\,\xi_{83}\,\xi_{85}\,\xi_{89}\,\xi_{78}\,\xi_{77}\left(1-\xi_{90}\right)\xi_{155}\left(\xi_{91}\,\xi_{131}+\xi_{92}\,\xi_{132}+\xi_{93}\,\xi_{133}+\xi_{94}\,\xi_{134}+\xi_{95}\,\xi_{135}+\xi_{96}\,\xi_{136}+62\right)$$

$$SZ_{35} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\xi_{82}\,\xi_{83}\,\xi_{85}\left(-\xi_{77}\,\xi_{78}\,\xi_{89}+1\right)\xi_{90}\left(\xi_{91}\,\xi_{131}+\xi_{92}\,\xi_{132}+\xi_{93}\,\xi_{133}+\xi_{94}\,\xi_{134}+\xi_{95}\,\xi_{135}+\xi_{96}\,\xi_{136}\right)$$

$$SZ_{36} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\xi_{82}\,\xi_{83}\,\xi_{85}\left(-\xi_{77}\,\xi_{78}\,\xi_{89}+1\right)\left(1-\xi_{90}\right)\xi_{155}\left(\xi_{91}\,\xi_{131}+\xi_{92}\,\xi_{132}+\xi_{93}\,\xi_{133}+\xi_{94}\,\xi_{134}+\xi_{95}\,\xi_{135}+\xi_{96}\,\xi_{136}\right)$$

$$SZ_{37} := \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\xi_{82}\,\xi_{83}\left(1-\xi_{85}\right)\xi_{88}\,\xi_{78}\,\xi_{77}\,\xi_{90}\left(\xi_{91}\,\xi_{137}+\xi_{92}\,\xi_{138}+\xi_{93}\,\xi_{139}+\xi_{94}\,\xi_{140}+\xi_{95}\,\xi_{141}+\xi_{96}\,\xi_{142}+118\right)$$

$$SZ_{38} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\xi_{82}\,\xi_{83}\left(1-\xi_{85}\right)\xi_{88}\,\xi_{78}\,\xi_{77}\left(1-\xi_{90}\right)\xi_{155}\left(\xi_{91}\,\xi_{137}+\xi_{92}\,\xi_{138}+\xi_{93}\,\xi_{139}+\xi_{94}\,\xi_{140}+\xi_{95}\,\xi_{141}+\xi_{96}\,\xi_{142}+118\right)$$

$$SZ_{39} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\xi_{82}\,\xi_{83}\left(1-\xi_{85}\right)\left(-\xi_{77}\,\xi_{78}\,\xi_{88}+1\right)\xi_{90}\left(\xi_{91}\,\xi_{137}+\xi_{92}\,\xi_{138}+\xi_{93}\,\xi_{139}+\xi_{94}\,\xi_{140}+\xi_{95}\,\xi_{141}+\xi_{96}\,\xi_{142}\right)$$

$$SZ_{40} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\xi_{82}\,\xi_{83}\left(1-\xi_{85}\right)\left(-\xi_{77}\,\xi_{78}\,\xi_{88}+1\right)\left(1-\xi_{90}\right)\xi_{155}\left(\xi_{91}\,\xi_{137}+\xi_{92}\,\xi_{138}+\xi_{93}\,\xi_{139}+\xi_{94}\,\xi_{140}+\xi_{95}\,\xi_{141}+\xi_{96}\,\xi_{142}\right)$$

$$SZ_{41} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\xi_{82}\left(1-\xi_{83}\right)\xi_{85}\,\xi_{89}\,\xi_{78}\,\xi_{77}\,\xi_{90}\left(\xi_{91}\,\xi_{143}+\xi_{92}\,\xi_{144}+\xi_{93}\,\xi_{145}+\xi_{94}\,\xi_{146}+\xi_{95}\,\xi_{147}+\xi_{96}\,\xi_{148}+83\right)$$

$$SZ_{42} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\xi_{82}\left(1-\xi_{83}\right)\xi_{85}\,\xi_{89}\,\xi_{78}\,\xi_{77}\left(1-\xi_{90}\right)\xi_{155}\left(\xi_{91}\,\xi_{143}+\xi_{92}\,\xi_{144}+\xi_{93}\,\xi_{145}+\xi_{94}\,\xi_{146}+\xi_{95}\,\xi_{147}+\xi_{96}\,\xi_{148}+83\right)$$

$$SZ_{43} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\xi_{82}\left(1-\xi_{83}\right)\xi_{85}\left(-\xi_{77}\,\xi_{78}\,\xi_{89}+1\right)\xi_{90}\left(\xi_{91}\,\xi_{143}+\xi_{92}\,\xi_{144}+\xi_{93}\,\xi_{145}+\xi_{94}\,\xi_{146}+\xi_{95}\,\xi_{147}+\xi_{96}\,\xi_{148}\right)$$

$$SZ_{44} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\xi_{82}\left(1-\xi_{83}\right)\xi_{85}\left(-\xi_{77}\,\xi_{78}\,\xi_{89}+1\right)\left(1-\xi_{90}\right)\xi_{155}\left(\xi_{91}\,\xi_{143}+\xi_{92}\,\xi_{144}+\xi_{93}\,\xi_{145}+\xi_{94}\,\xi_{146}+\xi_{95}\,\xi_{147}+\xi_{96}\,\xi_{148}\right)$$

$$SZ_{45} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\xi_{82}\left(1-\xi_{83}\right)\left(1-\xi_{85}\right)\xi_{88}\,\xi_{78}\,\xi_{77}\,\xi_{90}\left(\xi_{91}\,\xi_{149}+\xi_{92}\,\xi_{150}+\xi_{93}\,\xi_{151}+\xi_{94}\,\xi_{152}+\xi_{95}\,\xi_{153}+\xi_{96}\,\xi_{154}+120\right)$$

$$SZ_{46} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\xi_{82}\left(1-\xi_{83}\right)\left(1-\xi_{85}\right)\xi_{88}\,\xi_{78}\,\xi_{77}\left(1-\xi_{90}\right)\xi_{155}\left(\xi_{91}\,\xi_{149}+\xi_{92}\,\xi_{150}+\xi_{93}\,\xi_{151}+\xi_{94}\,\xi_{152}+\xi_{95}\,\xi_{153}+\xi_{96}\,\xi_{154}+120\right)$$

$$SZ_{47} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\xi_{82}\left(1-\xi_{83}\right)\left(1-\xi_{85}\right)\left(-\xi_{77}\,\xi_{78}\,\xi_{88}+1\right)\xi_{90}\left(\xi_{91}\,\xi_{149}+\xi_{92}\,\xi_{150}+\xi_{93}\,\xi_{151}+\xi_{94}\,\xi_{152}+\xi_{95}\,\xi_{153}+\xi_{96}\,\xi_{154}\right)$$

$$SZ_{48} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\xi_{82}\left(1-\xi_{83}\right)\left(1-\xi_{85}\right)\left(-\xi_{77}\,\xi_{78}\,\xi_{88}+1\right)\left(1-\xi_{90}\right)\xi_{155}\left(\xi_{91}\,\xi_{149}+\xi_{92}\,\xi_{150}+\xi_{93}\,\xi_{151}+\xi_{94}\,\xi_{152}+\xi_{95}\,\xi_{153}+\xi_{96}\,\xi_{154}\right)$$

$$SZ_{49} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\left(1-\xi_{82}\right)\xi_{84}\,\xi_{86}\,\xi_{89}\,\xi_{78}\,\xi_{77}\,\xi_{90}\left(\xi_{91}\,\xi_{131}+\xi_{92}\,\xi_{132}+\xi_{93}\,\xi_{133}+\xi_{94}\,\xi_{134}+\xi_{95}\,\xi_{135}+\xi_{96}\,\xi_{136}+62\right)$$

$$SZ_{50} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\left(1-\xi_{82}\right)\xi_{84}\,\xi_{86}\,\xi_{89}\,\xi_{78}\,\xi_{77}\left(1-\xi_{90}\right)\xi_{155}\left(\xi_{91}\,\xi_{131}+\xi_{92}\,\xi_{132}+\xi_{93}\,\xi_{133}+\xi_{94}\,\xi_{134}+\xi_{95}\,\xi_{135}+\xi_{96}\,\xi_{136}+62\right)$$

$$SZ_{51} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\left(1-\xi_{82}\right)\xi_{84}\,\xi_{86}\left(-\xi_{77}\,\xi_{78}\,\xi_{89}+1\right)\xi_{90}\left(\xi_{91}\,\xi_{131}+\xi_{92}\,\xi_{132}+\xi_{93}\,\xi_{133}+\xi_{94}\,\xi_{134}+\xi_{95}\,\xi_{135}+\xi_{96}\,\xi_{136}\right)$$

$$SZ_{52} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\left(1-\xi_{82}\right)\xi_{84}\,\xi_{86}\left(-\xi_{77}\,\xi_{78}\,\xi_{89}+1\right)\left(1-\xi_{90}\right)\xi_{155}\left(\xi_{91}\,\xi_{131}+\xi_{92}\,\xi_{132}+\xi_{93}\,\xi_{133}+\xi_{94}\,\xi_{134}+\xi_{95}\,\xi_{135}+\xi_{96}\,\xi_{136}\right)$$

$$SZ_{53} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\left(1-\xi_{82}\right)\xi_{84}\left(1-\xi_{86}\right)\xi_{88}\,\xi_{78}\,\xi_{77}\,\xi_{90}\left(\xi_{91}\,\xi_{137}+\xi_{92}\,\xi_{138}+\xi_{93}\,\xi_{139}+\xi_{94}\,\xi_{140}+\xi_{95}\,\xi_{141}+\xi_{96}\,\xi_{142}+118\right)$$

$$SZ_{54} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\left(1-\xi_{82}\right)\xi_{84}\left(1-\xi_{86}\right)\xi_{88}\,\xi_{78}\,\xi_{77}\left(1-\xi_{90}\right)\xi_{155}\left(\xi_{91}\,\xi_{137}+\xi_{92}\,\xi_{138}+\xi_{93}\,\xi_{139}+\xi_{94}\,\xi_{140}+\xi_{95}\,\xi_{141}+\xi_{96}\,\xi_{142}+118\right)$$

$$SZ_{55} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\left(1-\xi_{82}\right)\xi_{84}\left(1-\xi_{86}\right)\left(-\xi_{77}\,\xi_{78}\,\xi_{88}+1\right)\xi_{90}\left(\xi_{91}\,\xi_{137}+\xi_{92}\,\xi_{138}+\xi_{93}\,\xi_{139}+\xi_{94}\,\xi_{140}+\xi_{95}\,\xi_{141}+\xi_{96}\,\xi_{142}\right)$$

$$SZ_{56} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\left(1-\xi_{82}\right)\xi_{84}\left(1-\xi_{86}\right)\left(-\xi_{77}\,\xi_{78}\,\xi_{88}+1\right)\left(1-\xi_{90}\right)\xi_{155}\left(\xi_{91}\,\xi_{137}+\xi_{92}\,\xi_{138}+\xi_{93}\,\xi_{139}+\xi_{94}\,\xi_{140}+\xi_{95}\,\xi_{141}+\xi_{96}\,\xi_{142}\right)$$

$$SZ_{57} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\left(1-\xi_{82}\right)\left(1-\xi_{84}\right)\xi_{86}\,\xi_{89}\,\xi_{78}\,\xi_{77}\,\xi_{90}\left(\xi_{91}\,\xi_{143}+\xi_{92}\,\xi_{144}+\xi_{93}\,\xi_{145}+\xi_{94}\,\xi_{146}+\xi_{95}\,\xi_{147}+\xi_{96}\,\xi_{148}+83\right)$$

$$SZ_{58} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\left(1-\xi_{82}\right)\left(1-\xi_{84}\right)\xi_{86}\,\xi_{89}\,\xi_{78}\,\xi_{77}\left(1-\xi_{90}\right)\xi_{155}\left(\xi_{91}\,\xi_{143}+\xi_{92}\,\xi_{144}+\xi_{93}\,\xi_{145}+\xi_{94}\,\xi_{146}+\xi_{95}\,\xi_{147}+\xi_{96}\,\xi_{148}+83\right)$$

$$SZ_{59} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\left(1-\xi_{82}\right)\left(1-\xi_{84}\right)\xi_{86}\left(-\xi_{77}\,\xi_{78}\,\xi_{89}+1\right)\xi_{90}\left(\xi_{91}\,\xi_{143}+\xi_{92}\,\xi_{144}+\xi_{93}\,\xi_{145}+\xi_{94}\,\xi_{146}+\xi_{95}\,\xi_{147}+\xi_{96}\,\xi_{148}\right)$$

$$SZ_{60} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\left(1-\xi_{82}\right)\left(1-\xi_{84}\right)\xi_{86}\left(-\xi_{77}\,\xi_{78}\,\xi_{89}+1\right)\left(1-\xi_{90}\right)\xi_{155}\left(\xi_{91}\,\xi_{143}+\xi_{92}\,\xi_{144}+\xi_{93}\,\xi_{145}+\xi_{94}\,\xi_{146}+\xi_{95}\,\xi_{147}+\xi_{96}\,\xi_{148}\right)$$

$$SZ_{61} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\left(1-\xi_{82}\right)\left(1-\xi_{84}\right)\left(1-\xi_{86}\right)\xi_{88}\,\xi_{78}\,\xi_{77}\,\xi_{90}\left(\xi_{91}\,\xi_{149}+\xi_{92}\,\xi_{150}+\xi_{93}\,\xi_{151}+\xi_{94}\,\xi_{152}+\xi_{95}\,\xi_{153}+\xi_{96}\,\xi_{154}+120\right)$$

$$SZ_{62} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\left(1-\xi_{82}\right)\left(1-\xi_{84}\right)\left(1-\xi_{86}\right)\xi_{88}\,\xi_{78}\,\xi_{77}\left(1-\xi_{90}\right)\xi_{155}\left(\xi_{91}\,\xi_{149}+\xi_{92}\,\xi_{150}+\xi_{93}\,\xi_{151}+\xi_{94}\,\xi_{152}+\xi_{95}\,\xi_{153}+\xi_{96}\,\xi_{154}+120\right)$$

$$SZ_{63} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\left(1-\xi_{82}\right)\left(1-\xi_{84}\right)\left(1-\xi_{86}\right)\left(-\xi_{77}\,\xi_{78}\,\xi_{88}+1\right)\xi_{90}\left(\xi_{91}\,\xi_{149}+\xi_{92}\,\xi_{150}+\xi_{93}\,\xi_{151}+\xi_{94}\,\xi_{152}+\xi_{95}\,\xi_{153}+\xi_{96}\,\xi_{154}\right)$$

$$SZ_{64} = \left(1-\xi_{79}\right)\left(1-\xi_{81}\right)\left(1-\xi_{82}\right)\left(1-\xi_{84}\right)\left(1-\xi_{86}\right)\left(-\xi_{77}\,\xi_{78}\,\xi_{88}+1\right)\left(1-\xi_{90}\right)\xi_{155}\left(\xi_{91}\,\xi_{149}+\xi_{92}\,\xi_{150}+\xi_{93}\,\xi_{151}+\xi_{94}\,\xi_{152}+\xi_{95}\,\xi_{153}+\xi_{96}\,\xi_{154}\right)$$

## 4. MODELL

Unter dem Modell $F$ verstehen wir die Funktion:

$$F\left(\xi_1,\ldots,\xi_{155}\right) = f\left(\xi_1,\ldots,\xi_{76}\right)\cdot\sum_{i=1}^{64} SZ_i$$