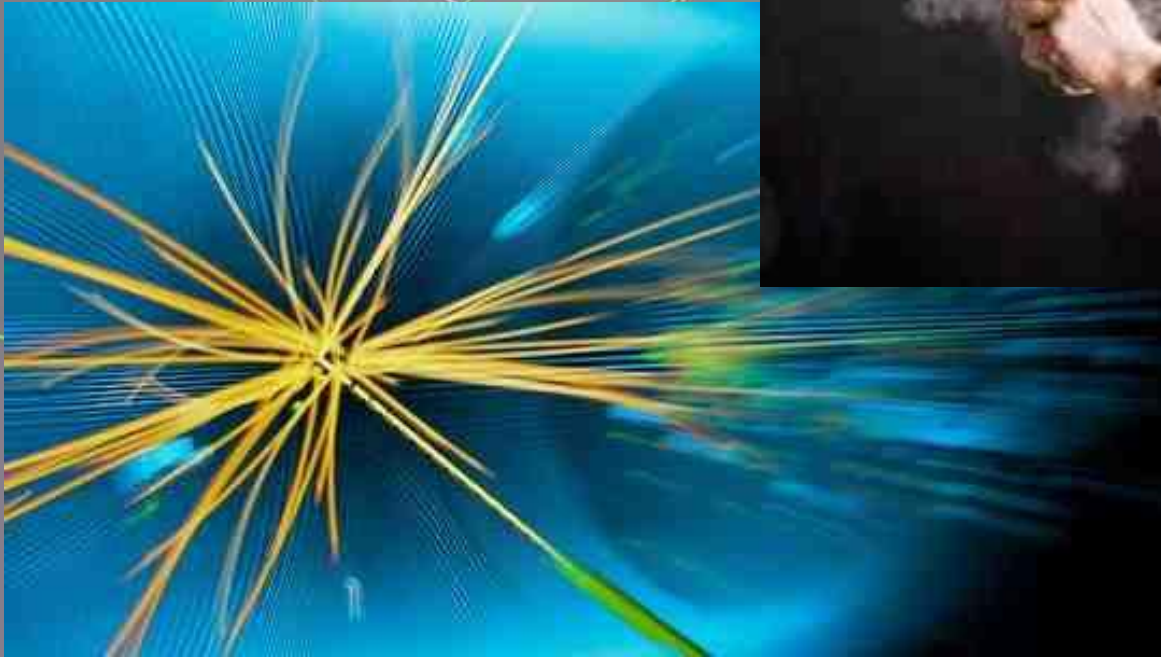
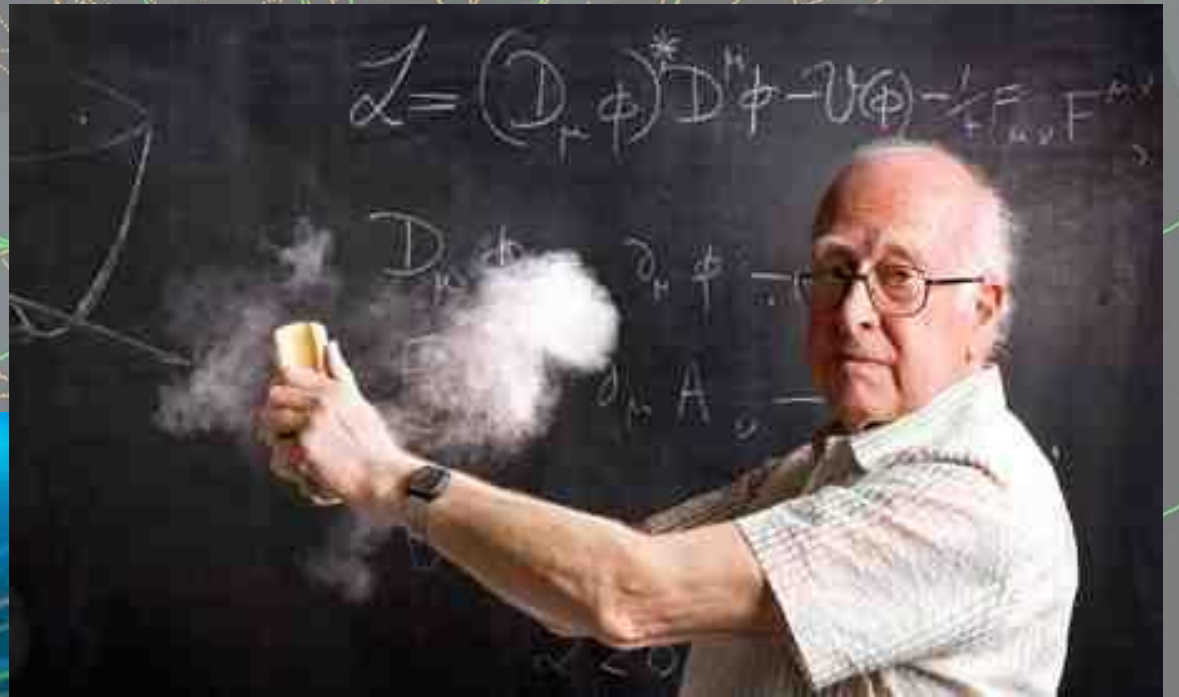


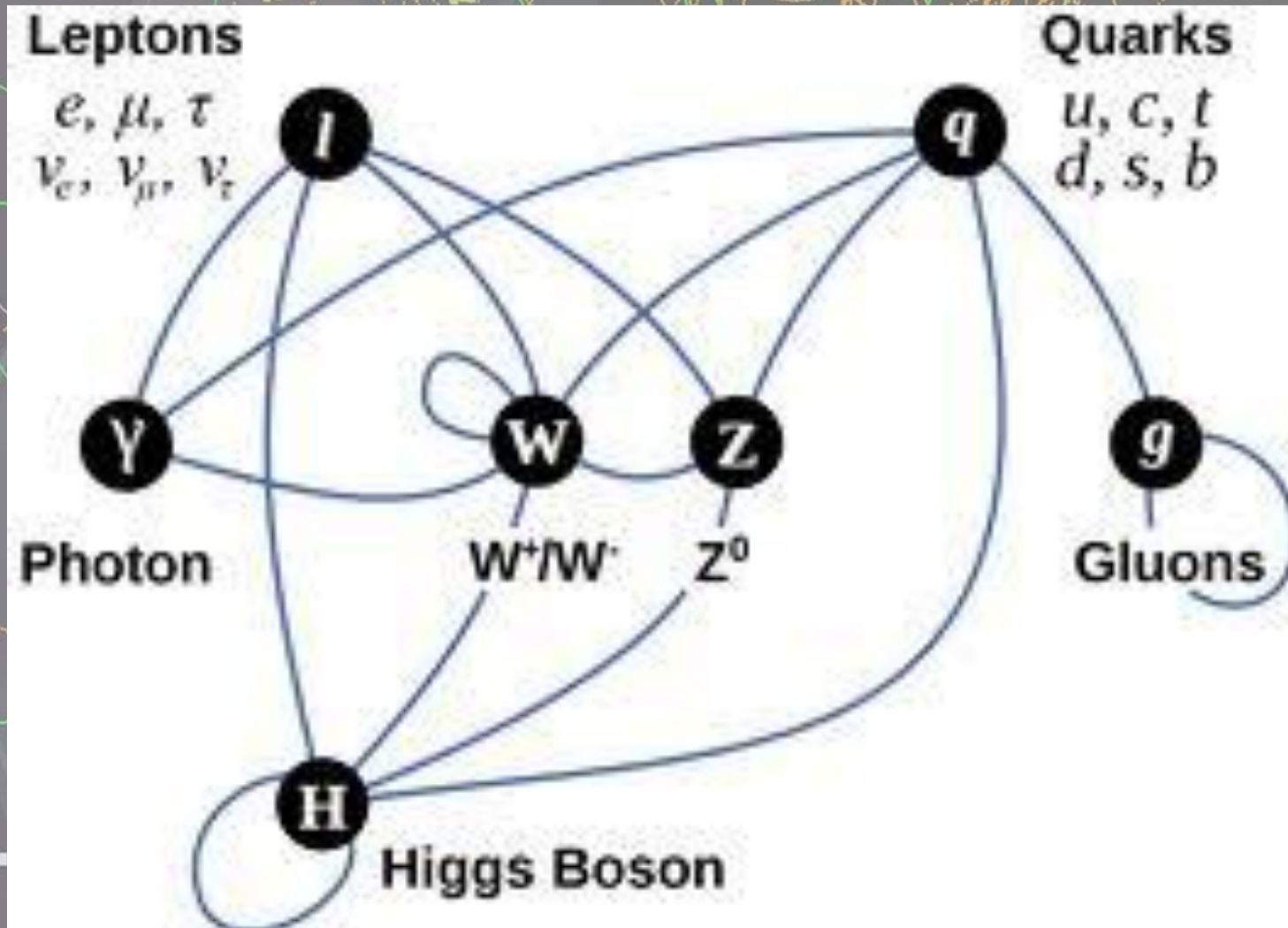
Higgs-Boson



Allgemeines

- Higgs-Feld verleiht Teilchen Masse
- Spin 0 (Eigendrehimpuls)
- Ungeladen
- Masse ca. 125 GeV
- Hinweis auf Higgs-Feld
- Lebensdauer ca. 10^{-22} s

Allgemeines



Überlegungen zur Messmethode

$$\bar{\nu}: h = +\frac{1}{2}$$

$$\nu: h = -\frac{1}{2}$$

$$l: h = \pm\frac{1}{2}$$

$$\bar{l}: h = \pm\frac{1}{2}$$

$$\text{Bosonen: } h = \pm 1, 0$$

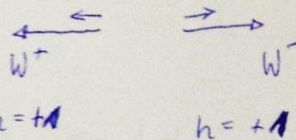
h ... Helizität: Ausrichtung des Spins bezüglich der Bewegungsrichtung
 es gilt immer Helizitätsershaltung! $\Rightarrow h_{\text{Anfang}} = h_{\text{Ende}}$

Anfang

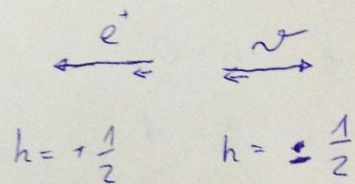
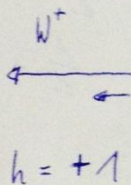
\uparrow
 \bullet

$$h = 0$$

Ende

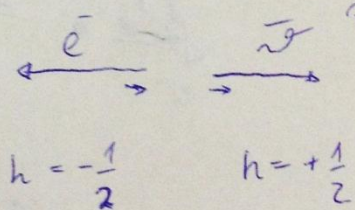
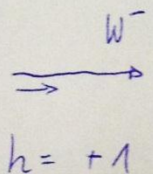


$$W^+ \rightarrow e^+ \nu$$



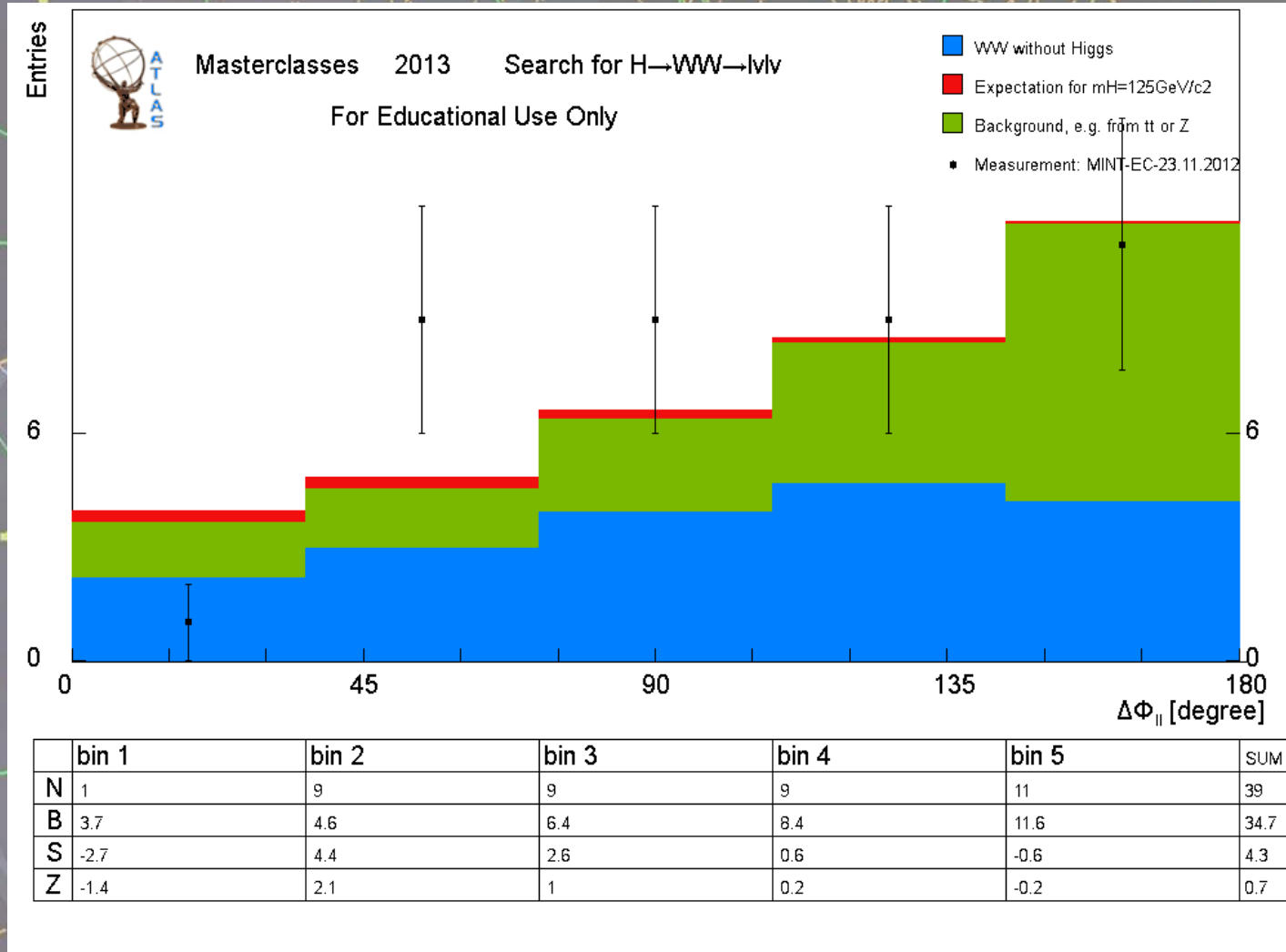
Ruhsystem W^+

$$W^- \rightarrow e^- \bar{\nu}$$

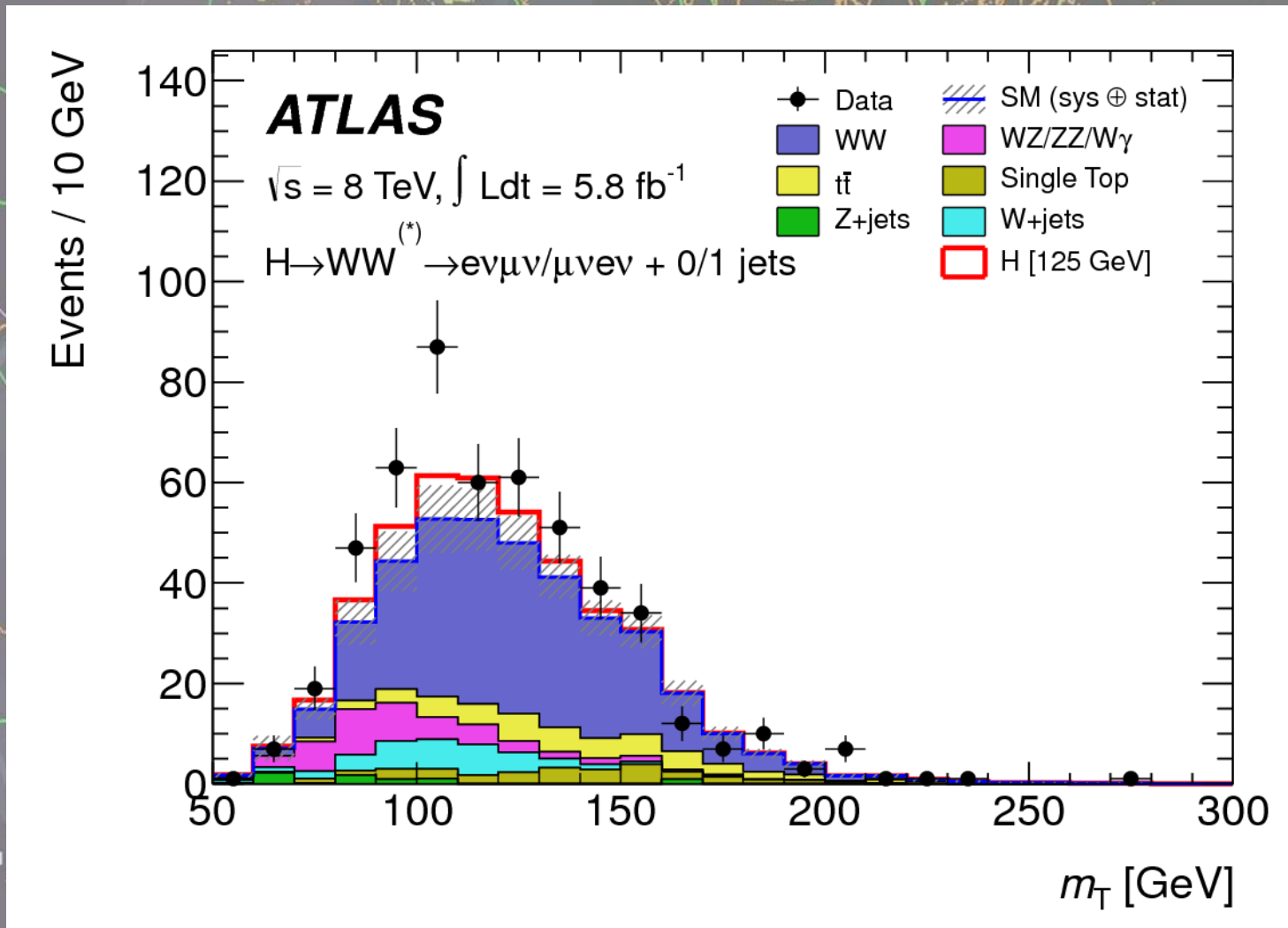


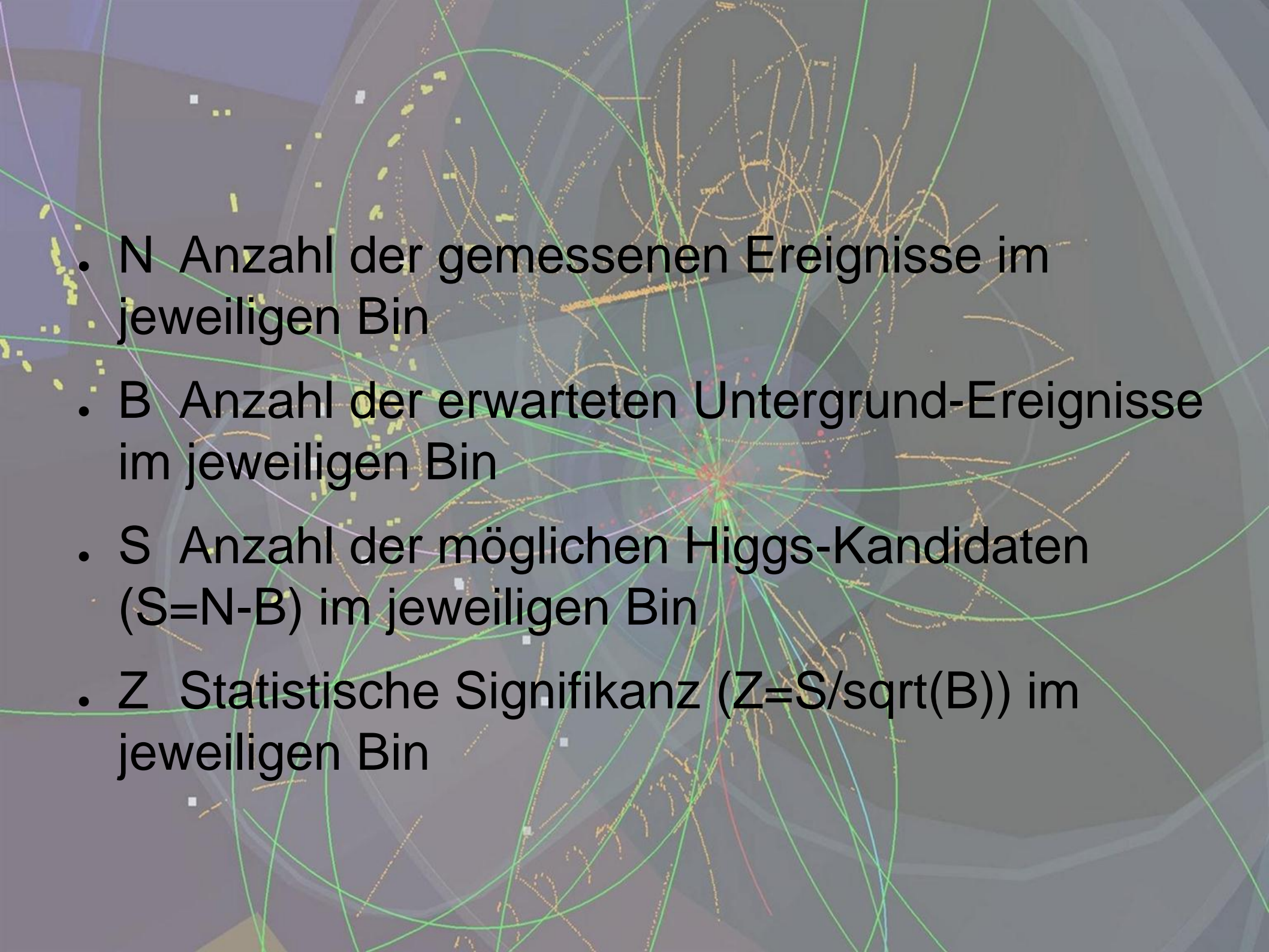
Ruhsystem W^-

Ergebnis



Ergebnis



- 
- The background of the slide is a complex visualization of particle detector data. It features a central point from which numerous green and orange lines radiate outwards, representing particle tracks. There are also several clusters of small yellow and white squares scattered across the image, likely representing interaction vertices or specific event points. The overall aesthetic is technical and scientific, typical of a physics presentation.
- N Anzahl der gemessenen Ereignisse im jeweiligen Bin
 - B Anzahl der erwarteten Untergrund-Ereignisse im jeweiligen Bin
 - S Anzahl der möglichen Higgs-Kandidaten ($S=N-B$) im jeweiligen Bin
 - Z Statistische Signifikanz ($Z=S/\sqrt{B}$) im jeweiligen Bin