

组会报告

2018.5.21

敖冬

- p.d.f. ($m, merr$) = $n_{\Xi} \times G_{\Xi}(m|merr) \times F_{\Xi}(merr) + (ratio \cdot n_{\Xi}) \times G_{\Omega}(m|merr) \times F_{\Omega}(merr) + (n_{\text{total}} - n_{\Xi} - ratio \cdot n_{\Xi}) \times F_{\text{bkg}}(merr|m) \times P_{\text{bkg}}(m)$
- 其中：
- $G_{\Xi}(m|merr) = G_{\Xi}(m; \sigma_i = merr \times SF_{\Xi}, mean_{\Xi})$
- $G_{\Omega}(m|merr) = G_{\Omega}(m; \sigma_i = merr \times SF_{\Omega}, mean_{\Omega} = mean_{\Xi} + const)$
- $F_{\Xi(\Omega)}(merr) = F_{\Xi(\Omega)}(merr; \gamma_{\Xi(\Omega)}, \beta_{\Xi(\Omega)}, \mu_{\Xi(\Omega)}) = \frac{(x - \mu_{\Xi(\Omega)})^{\gamma_{\Xi(\Omega)} - 1} \cdot e^{-\frac{x - \mu_{\Xi(\Omega)}}{\beta_{\Xi(\Omega)}}}}{\Gamma(\gamma_{\Xi(\Omega)}) \cdot \beta_{\Xi(\Omega)}^{\gamma_{\Xi(\Omega)}}}$
- $P_{\text{bkg}}(m) = \text{cheb}(m; c0, c1)$
- $F_{\text{bkg}}(merr|m) = F_{\text{bkg}}(merr; \gamma_{\text{bkg}}, \beta_{\text{bkg}}, \mu_{\text{bkg}}) = \frac{(x - \mu_{\text{bkg}})^{\gamma_{\text{bkg}} - 1} \cdot e^{-\frac{x - \mu_{\text{bkg}}}{\beta_{\text{bkg}}}}}{\Gamma(\gamma_{\text{bkg}}) \cdot \beta_{\text{bkg}}^{\gamma_{\text{bkg}}}}$
- $\beta_{\text{bkg}} = aL + (aR - aL) \times \frac{m - 2420}{300}$
- $\mu_{\text{bkg}} = bL + (bR - bL) \times \frac{m - 2420}{300}$
- 模型中的自由参数包括：
- $n_{\Xi}, mean_{\Xi}, ratio, SF_{\Xi}, SF_{\Omega}, \gamma_{\Xi}, \beta_{\Xi}, \mu_{\Xi}, \gamma_{\Omega}, \beta_{\Omega}, \mu_{\Omega}, \gamma_{\text{bkg}}, aL, aR, bL, bR, c0, c1$

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- $n_{\Xi}, mean_{\Xi}, ratio, SF_{\Xi}, SF_{\Omega}, \gamma_{\Xi}, \beta_{\Xi}, \mu_{\Xi}, \gamma_{\Omega}, \beta_{\Omega}, \mu_{\Omega}, \gamma_{bkg}, aL, aR, bL, bR, c0, c1$
- 其中 $n_{\Xi}, mean_{\Xi}, ratio, c0, c1$ 需要保持浮动
- $SF_{\Xi}, SF_{\Omega}, \gamma_{\Xi}, \beta_{\Xi}, \mu_{\Xi}, \gamma_{\Omega}, \beta_{\Omega}, \mu_{\Omega}$ 应该可以在获得蒙卡后由蒙卡给出，或者由 β, μ 和 m 的关系给出？
- $\gamma_{bkg}, aL, aR, bL, bR$ 可以由数据给出？