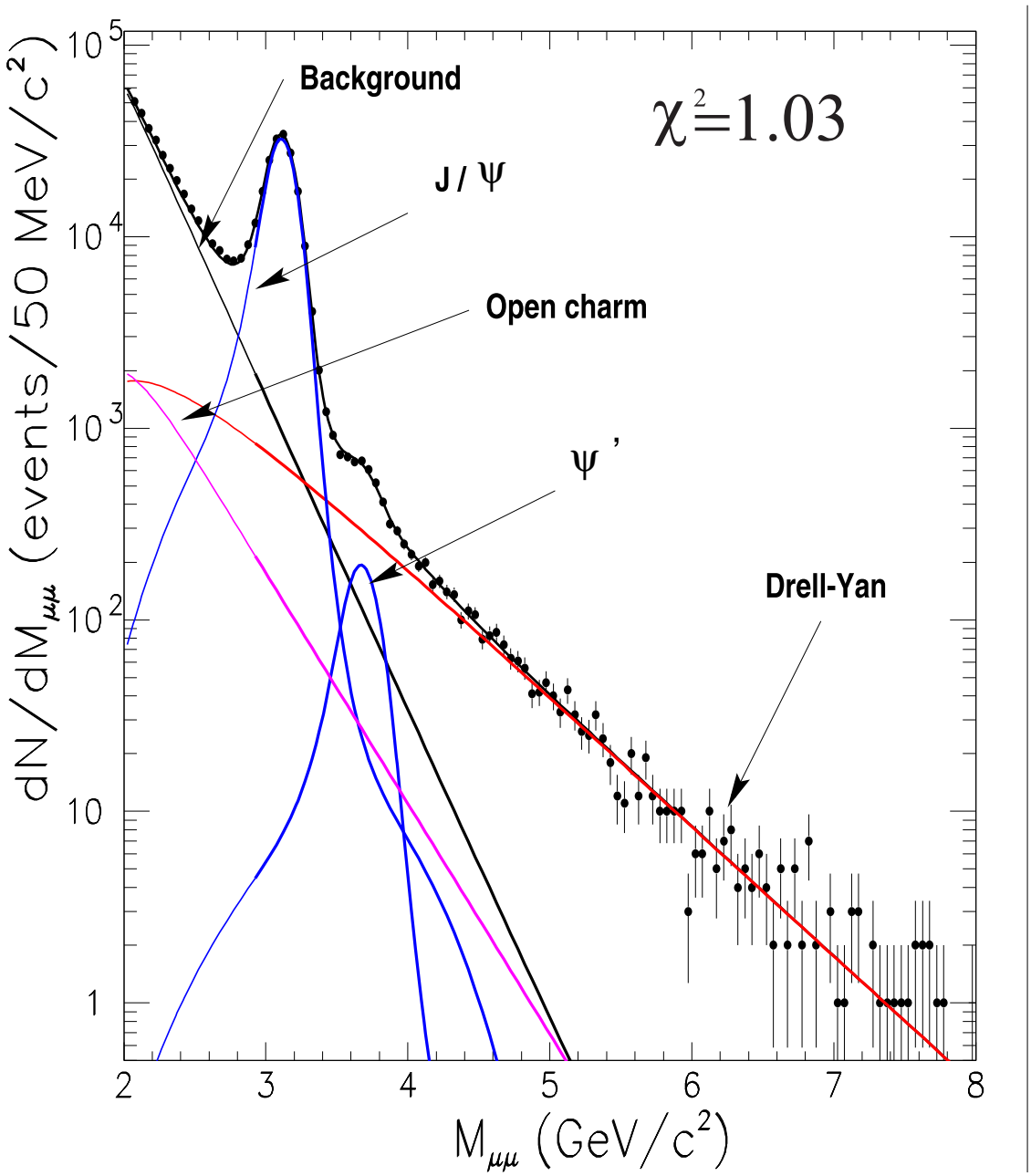
fit to the mass spectrum

$$\frac{dN}{dM} = A_{J/\Psi}\frac{dN_{J/\Psi}}{dM} + A_{\Psi'}\frac{dN_{\Psi'}}{dM} + A_{DY}\frac{dN_{DY}}{dM} + dN_{D\bar{D}}\frac{N_{D\bar{D}}}{dM} + \frac{dN_{BG}}{dM}$$

J/Ψ and Ψ' line shapes from detector simulation

$D\bar{D}$ yield from Pythia model