

$$\sigma_{i+p \rightarrow B} = \sigma_{0,i} \frac{\Gamma_i^2 (T - E_{\text{th},i})^2}{(T^2 - M_i^2)^2 + \Gamma_i^2 M_i^2} + \sigma_{1,i} \left(1 - \frac{E_{\text{th},i}}{T} \right)^{\xi_i} \left(1 + \frac{\Delta_i}{1 + (T_h/T)^2} \right).$$