

$$\sigma_{lmn} = \tilde{\sigma}_{lmn} \left[ 1 + \sigma_{lmn,1} \left( \frac{\Omega_S}{\tilde{\sigma}_{lmn}} \right) + \sigma_{lmn,2} \left( \frac{\Omega_S}{\tilde{\sigma}_{lmn}} \right)^2 \right] + m\Omega_S = m\Omega_{\text{pat}}$$