

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