$$\sum_e a_{ie}^{\phi} m_i^{\phi} \chi_e = \sum_i \Gamma_i^{\phi}$$

$$\sum_e \left\{ \sum_i \sum_{\phi} a_{ie}^{\phi} a_{if}^{\phi} m_i^{\phi} \right\} \chi_e + \sum_{\phi} \sum_i a_{if}^{\phi} m_i^{\phi} \left(\frac{n^{\phi}}{m^{\phi}} \right) = \sum_i \sum_{\phi} a_{if}^{\phi} \Gamma_i^{\phi} + B_f$$