$$\mathbf{bm}_{i\_,j\_\to k\_} := \mathbb{E}\left[(\beta_i+\beta_j)\,\mathbf{b}_k,\ (\eta_i+\eta_j)\,\mathbf{y}_k,\ 1-\epsilon\,\eta_j\,\mathbf{y}_k\,\beta_i+\mathbf{O}[\epsilon]^2\right]$$

$$\mathbf{b\Delta}_{i\_->j\_,k\_} := \mathbb{E}\left[\beta_i\,(\mathbf{b}_j+\mathbf{b}_k),\ \eta_i\,\left(e^{-\mathbf{b}_k}\,\mathbf{y}_j+\mathbf{y}_k\right),\right.$$
$$\left.1+\epsilon\,\eta_i^2\,\mathbf{y}_j\,\mathbf{y}_k\,e^{-\mathbf{b}_k}/2+\mathbf{O}[\epsilon]^2\right]$$

$$\mathbf{bS}_{i\_} := \mathbb{E}\left[-\beta_i\,\mathbf{b}_i,\ -e^{\mathbf{b}_i}\,\eta_i\,\mathbf{y}_i,\right.$$
$$\left.1-\epsilon\,e^{\mathbf{b}_i}\,\eta_i\,\mathbf{y}_i\,\left(\beta_i+e^{\mathbf{b}_i}\,\eta_i\,\mathbf{y}_i/2\right)+\mathbf{O}[\epsilon]^2\right]$$

$$\mathbf{bSi}_{i\_} := \mathbb{E}\left[-\beta_i\,\mathbf{b}_i,\ -e^{\mathbf{b}_i}\,\eta_i\,\mathbf{y}_i,\right.$$
$$\left.1-\epsilon\,e^{\mathbf{b}_i}\,\eta_i\,\mathbf{y}_i\,\left(\beta_i-1+e^{\mathbf{b}_i}\,\eta_i\,\mathbf{y}_i/2\right)+\mathbf{O}[\epsilon]^2\right]$$