$$h_k(r_{ki}, r_{kj}, \theta_{ikj}) = \lambda \cdot \exp\left[\gamma(r_{ik}-a)^{-1} + \gamma(r_{kj}-a)^{-1}\right] \cdot \left(\cos\theta_{ikj} + \frac{1}{3}\right)^2 \quad (7)$$

$$\cos\theta_{ikj} = \left(\frac{\bar{r}_{ik}^2 + \bar{r}_{jk}^2 - \bar{r}_{ij}^2}{2 \times \bar{r}_{ik} \times \bar{r}_{jk}}\right)$$

* $$\frac{\partial h_k}{\partial r_{ij}} = \lambda \cdot \exp\left[\gamma(\bar{r}_{ik}-a)^{-1} + \gamma(\bar{r}_{kj}-a)^{-1}\right] \cdot \frac{(-\bar{r}_{ij})}{\bar{r}_{ik} \times \bar{r}_{jk}} \times 2\left(\cos\theta_{ikj} + \frac{1}{3}\right)$$

* $$\frac{\partial h_k}{\partial r_{ik}} = \lambda \cdot \exp\left[\gamma(\bar{r}_{ik}-a)^{-1} + \gamma(\bar{r}_{kj}-a)^{-1}\right] \cdot (-\gamma)(\bar{r}_{ik}-a)^{-2} \cdot \left(\cos\theta_{ikj} + \frac{1}{3}\right)^2$$

$$+ \lambda \cdot \exp\left[\gamma(\bar{r}_{ik}-a)^{-1} + \gamma(\bar{r}_{kj}-a)^{-1}\right] \cdot \cancel{2}\left(\cos\theta_{ikj} + \frac{1}{3}\right) \cdot \frac{(\bar{r}_{ik}^2 - \bar{r}_{jk}^2 + \bar{r}_{ij}^2)}{\cancel{2} \times \bar{r}_{ik}^2 \times \bar{r}_{jk}}$$