$$h_j(r_{ji}, r_{jk}, \theta_{ijk}) = \lambda \cdot \exp\left[\gamma (r_{ji}-a)^{-1} + \gamma (r_{jk}-a)^{-1}\right] \cdot \left(\cos\theta_{ijk} + \frac{1}{3}\right)^2 \qquad 6$$

$$\cos\theta_{ijk} = \frac{\bar{r}_{ji}^{2} + \bar{r}_{jk}^{2} - \bar{r}_{ik}^{2}}{2 \times \bar{r}_{ji} \times \bar{r}_{jk}}$$

$$* \quad \frac{\partial h_j}{\partial r_{ij}} = \lambda \cdot \exp\left[\gamma (r_{ji}-a)^{-1} + \gamma (r_{jk}-a)^{-1}\right] \cdot (-\gamma)(r_{ji}-a)^{-2} \cdot \left(\cos\theta_{ijk} + \frac{1}{3}\right)^2$$

$$+ \lambda \cdot \exp\left[\gamma (r_{ji}-a)^{-1} + \gamma (r_{jk}-a)^{-1}\right] \cdot \cancel{2}\left(\cos\theta_{ijk} + \frac{1}{3}\right) \cdot \frac{(r_{ji}^{2} - r_{jk}^{2} + r_{ik}^{2})}{\cancel{2} \times r_{ij}^{2} \times r_{jk}}$$

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