

following is my opinion, for a softcore system, its potential can be written as

$$\begin{aligned}
 V = & \sum_{bonds} () + \sum_{angles} () + \sum_{torsions} () + \sum_{vdW} () && \text{only common atoms} \\
 + & \sum_{bonds} () + \sum_{angles} () + \sum_{torsions} () + \sum_{vdW} () && \text{only softcore atoms} \\
 + & \sum_{bonds} () + \sum_{angles} () + \sum_{torsions} () + \sum_{vdW} () && \text{common-softcore atoms}
 \end{aligned}$$

→ using softcore formula

on the basis of linear mixing rule, $V(\lambda) = (1-\lambda)V_0 + \lambda V_1$, i couldn't draw a conclusion as the amber10 manual. please help me out.