

Derivative of Binder parameter:

$$\frac{\partial U_L}{\partial \beta} = (1 - U_L) \left(\langle E \rangle - 2 \frac{\langle m^2 E \rangle}{\langle m^2 \rangle} + \frac{\langle m^4 E \rangle}{\langle m^4 \rangle} \right)$$

$$\frac{\partial m}{\partial \beta} = \langle E \rangle \langle m \rangle - \langle m E \rangle$$