$$0 = \sum \frac{\partial^2 \log f(\mathbf{x} \mid \theta)}{\partial \theta \partial \theta^T} f(\mathbf{x} \mid \theta) + \frac{\partial \log f(\mathbf{x} \mid \theta)}{\partial \theta} \times \frac{\partial}{\partial \theta^T} f(\mathbf{x} \mid \theta)$$