$$-\sum \frac{\partial^2 \log f(\mathbf{x}\,|\,\theta)}{\partial\theta\partial\theta^T} f(\mathbf{x}\,|\,\theta) = \sum \frac{\partial \log f(\mathbf{x}\,|\,\theta)}{\partial\theta} \times \frac{\partial \log f(\mathbf{x}\,|\,\theta)}{\partial\theta^T} f(\mathbf{x}\,|\,\theta) = E[s(\theta)s(\theta)^T]$$