

Connection of action-angle variables to quantum mechanics comes from the correspondence principle:

$$\langle \mathbf{n}' | \hat{A} | \mathbf{n} \rangle = (2\pi)^{-F} \int_0^{2\pi} d\mathbf{q} A_{\text{cl}}(\bar{\mathbf{n}}, \mathbf{q})$$

