$$\int \left(u_c(y;y_{ca}) h_c^*(y;y_{cb}) + h_c(y;y_{ca}) u_c^*(y;y_{cb}) - \frac{H_1^2 q_c(y;y_{ca}) q_c^*(y;y_{cb})}{Q_1'(y)} \right) dy$$

$$= -\frac{\pi^2 H_1^2(y_{ca}) Q_1'(y_{ca})}{{U_1'}^2(y_{ca})} \left(C_{\mathrm{II}r}^2(y_{ca}) + C_{\mathrm{II}i}^2(y_{ca}) \right) \delta(y_{ca} - y_{cb})$$