

$$+ \int_{\tilde{K}} \left(\sqrt{\gamma} \hat{\mathbf{F}}^i v \Big|_{x^i_H} - \sqrt{\gamma} \hat{\mathbf{F}}^i v \Big|_{x^i_L} \right) d^2 \tilde{x} = \int_K \mathbf{S} \sqrt{\gamma} d^3 x$$