

Supplementary Material to the article

“Contribution of the order parameter fluctuations to the second harmonic generation in two-dimensional monomolecular superconductors”

Integrals mentioned in the main text have the form:

$$I_1(a, b) = 2 \int_a^\infty dy \frac{y + 1/4 - \sqrt{(y - 1/4)^2 + a}}{(y + 1/4 - ib)^2 \sqrt{(y - 1/4)^2 + a}}, \quad (\text{S1})$$

$$I_2(a, b) = \int_a^\infty dy \frac{y + 1 - \sqrt{(y - 1)^2 + 4a}}{(y + 1 - 2ib)^2 \sqrt{(y - 1)^2 + 4a}}, \quad (\text{S2})$$

$$I_3(a, b) = \int_a^\infty dy \frac{(y - a) - 1/4}{(y + 1 - 2ib)(y - 2ib)} \left\{ \frac{2y + 1 - 4ib}{(y + 1 - 2ib)(y - 2ib)} \left[\frac{A}{\sqrt{A^2 - 4(y - a)}} - \frac{y + 1}{\sqrt{(y - 1)^2 + 4a}} \right] + \frac{8(y - a)(y - ib)}{y(A^2 - 4(y - a))^{3/2}} \right\}, \quad (\text{S3})$$

where $A = 2y + 1 - 2ib$. Note that integrals I_1 and I_2 are related by the scale transformation:

$$I_1(a, b) = 8I_2(4a, 2b). \quad (\text{S4})$$

