

FLUXON SCATTERING ON A STRIPE-LIKE
IMPURITY IN A TWO-DIMENSIONAL
JOSEPHSON JUNCTION

I.O. Starodub, Y. Zolotaryuk

Bogolyubov Institute for Theoretical Physics,
Nat. Acad. of Sci. of Ukraine
(14b, Metrolohichna Str., Kyiv 03680, Ukraine;
e-mail: starodub@bitp.kiev.ua, yzolo@bitp.kiev.ua)

S u m m a r y

The interaction of a soliton (fluxon) with a stripe-like inhomogeneity in a two-dimensional Josephson junction is studied. The radiation emitted due to the fluxon scattering on the impurity is calculated. The total radiation energy shows a distinct resonant dependence as a function of the fluxon velocity. The current-voltage characteristic of such a junction with a fluxon trapped in it is calculated. The signature of the emitted radiation on the current-voltage dependence is analyzed.