

INTRASUBBAND PLASMONS IN A FINITE
ARRAY OF QUANTUM WIRES CONTAINING
A DISPLACED QUANTUM WIRE

Yu. V. Bludov, O. V. Shramkova

Usikov Institute for Radiophysics and Electronics,
Nat. Acad. Sci. of Ukraine
(12, Academician Proscura Str.,
Kharkiv 61085, Ukraine;
e-mail: bludov@ire.kharkov.ua,
oksana@ire.kharkov.ua)

S u m m a r y

The paper deals with the theoretical investigation of intrasubband plasmons in an array of quantum wires (QWs) consisting of a finite number of QWs with the same one-dimensional density of electrons. We consider that all QWs are arranged at an equal distance from each other except one QW, which is displaced from its position of periodicity. The existence of two local plasmon modes in the plasmon spectrum is found. It is shown that, under certain conditions, the existence of plasmon modes, whose spectrum does not practically depend on the position of the displaced QW in the array, is possible.