

Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Effects of screening on the propagation of graphene surface plasmons KEN-ICHI SASAKI, NORIO KUMADA, NTT Basic Research Laboratories — We investigated surface plasmons in epitaxial graphene, while paying particular attention to the effect of interface states and resistivity on the transport properties[1,2]. The propagation velocity of the surface plasmons is much slower than the electron Fermi velocity when the screening effect provided by interface states is taken into account. Furthermore, slow-moving surface plasmons undergo a strong diffusion when the Fermi energy is near the Dirac point. This is shown by a numerical simulation of an RLC circuit model and its continuum approximation known as the telegrapher's equation. We could explain recent experimental results for the surface plasmons satisfactorily. [1] Kumada *et al.*, New J. Phys. **16**, 063055 (2014). [2] Sasaki and Kumada, Phys. Rev. B **90**, 035449 (2014).

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Date submitted: 13 Nov 2014

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