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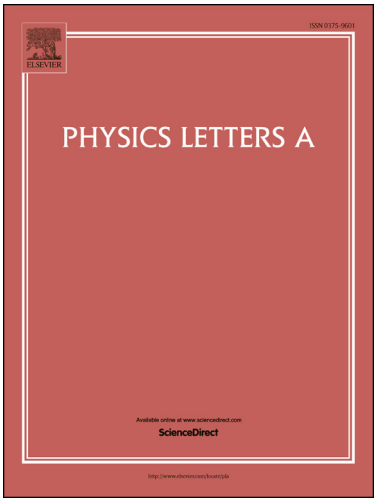

Impurity-induced anisotropic semiconductor-semimetal transition in monolayer biased black phosphorus

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PII: S0375-9601(18)30478-X
DOI: https://doi.org/10.1016/j.physleta.2018.04.052
Reference: PLA 25090

To appear in: *Physics Letters A*

Received date: 19 March 2018
Revised date: 13 April 2018
Accepted date: 24 April 2018

Please cite this article in press as: D.H. Bui, M. Yarmohammadi, Impurity-induced anisotropic semiconductor-semimetal transition in monolayer biased black phosphorus, *Phys. Lett. A* (2018), https://doi.org/10.1016/j.physleta.2018.04.052

Highlights

- Investigation and comparison the direction-dependent DOS of monolayer in the presence of impurity and bias voltage by using the tight-binding model and Green's function technique.
- Observation of electronic phase transition in x-direction and band gap variation in the presence of charged impurity and bias voltage in both directions.
- Appearing the extra Van Hove singularities due to the presence of impurity.