Origin of conical dispersion relations

Hojman, Sergio A.

A mechanism that produces conical dispersion relations is presented. A Kronig Penney one dimensional array with two different strengths delta function potentials gives rise to both the gap closure and the dispersion relation observed in graphene and other materials. The Schr¨odinger eigenvalue problem is locally invariant under the infinite dimensional Virasoro algebra near conical dispersion points in reciprocal space, thus suggesting a possible relation to string theory.