Hexagonal lattice Green functions applied to graphene WILLIAM SCHWALM, MAAJIDA MURDOCK[1], Physics and Astrophysics, Univ. ND — Horiguchi showed how to relate adjacency Green functions (FG) on the honeycomb to those of the triangle lattice, and so find them in closed form. We extend these results to include 2nd, 3rd, and 4th neighbors:

$$\tilde{H} = a\, H^{(1)} + b\, H^{(2)} + c\left(H^{(3)} + \frac{1}{2}H^{(4)}\right)$$

The GFs are applied to find LDOS or spectral density for confined regions and for lattice modifications that are periodic or of finite support, such as punctures, edges and tears. Application to SMT and ARPES on graphene are indicated.

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