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Normal-Metal/Graphene/Superconductor Tunnel Junctions NAN SUN, KRISTOF TAHY, DEBDEEP JENA, HUILI XING, STEVEN RUGGIERO, University of Notre Dame — We report on progress with lateral tunneling in N/G/S (Normal-metal/Graphene/Superconductor) tunnel junctions. Our primary approach is the study of systems of the form: Au/Graphene/Nb where lateral tunneling occurs across graphene bridges. Gates are also provided for Fermi-level adjustments in the standard "FET" format. Samples are created by e-beam lithography on electronic-grade oxidized Si substrates, using commercially prepared graphene flakes. Raman scattering is used to verify the single-layer nature of samples under study. We discuss the current status of studies designed to observe predicted oscillations in the tunnel conductance of samples with the above-described geometry, associated with Klein tunneling in the graphene films and Andreev reflections at graphene interfaces.

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