GATEWAY MEDIATED INTERSYSTEM CROSSING IN C_2H_2

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Recent Surface Electron Ejection by Laser-Excited Metastable (SEELEM) spectra have provided a clearer picture of the intersystem crossing of the $3\nu_3$ level of the S_1 surface of C_2H_2 to near-degenerate triplet states. The simultaneously recorded LIF and SEELEM spectra indicate that a single vibrational level of the T_3 surface couples the $3\nu_3$ level of the S_1 surface to a dense manifold of T_1 and T_2 states. This proposed coupling mechanism, Gateway Mediated Intersystem Crossing (GMISC), and other proposals will be discussed in light of the new data.