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Off-diagonal disorder and the nodal-antinodal dichotomy of the STM experiments in high-T_c superconductors[1] DIMITRIS GALANAKIS, Louisiana State Univ., STEFANOS PAPANIKOLAOU, Cornell Univ. — We present an explicit model for describing the basic features of the local density of states (LDOS) observed in STM experiments on high-T_c d-wave superconductors. The model includes a d-wave superconductor which has *weak* modulate off-diagonal disorder. We show that the low and high energy features of the LDOS are consistent with the observed experimental patterns and in particular, the anisotropic local domain features at high energies. At low energies, we show that the scattering peaks remain in accordance with the octet model, but in addition there are weak features that should be distinguishable in future experiments. Finally, we show that the emerging features of the LDOS lose their correspondence with the features of the imposed disorder, as its complexity increases spatially.

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