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Coexistence of a Triplet Nodal Order Parameter and a Singlet Order Parameter at Co / CoO / In contacts SHAY HACOHEN-GOURGY, BOAZ ALMOG, GUY DEUTSCHER, Tel-Aviv University — We present differential conductance measurements of Cobalt / Cobalt-Oxide / Indium planar junctions, 500nm x 500nm in size. The junctions span a wide range of barriers, from very low to a tunnel barrier. The characteristic conductance of all the junctions show a V-shape structure at low bias instead of the U-shape characteristic of a s-wave order parameter. The bias of the conductance peaks is, for all junctions, larger than the gap of indium. Both properties exclude pure s-wave pairing. The data is well fitted by a model that assumes the coexistence of s-wave singlet and equal spin p-wave triplet fluids. We find that the values of the s-wave and p-wave gaps follow the BCS temperature dependance and that the amplitude of the s-wave fluid increases with the barrier strength.

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