Competition between left and right spiral vortices and their combinations with different or equal amplitudes MANFRED LÜCKE, ALEXANDER PINTER, CHRISTIAN HOFFMANN, University Saarbrücken — Stability, bifurcation properties, and the spatiotemporal behavior of different nonlinear combination structures of spiral vortices in the counter rotating Taylor-Couette system are investigated by full numerical simulations and by coupled amplitude equation approximations. Stable cross-spiral structures with continuously varying content of left and right spiral modes are found. Their solution provides a stability transferring connection between the initially stable, axially counter propagating wave states of pure spirals and the axially standing waves of so-called ribbons that become stable slightly further away from onset of vortex flow.

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