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Short-period RS CVn and W UMa binaries: how are they related?

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**Abstract:** Two groups of late-type very close main sequence binaries, the so-called short-period RS Canum Venaticorum (RS CVn) and W Ursae Majoris (W UMa) systems, are important for the understanding of the structure and evolutionary consequences of angular momentum loss (AML) resulting from magnetic stellar winds of fast rotating solar type stars. The components of RS CVn stars are close to their Roche lobes, but still detached, whereas W UMa binaries are contact systems; both are rotating fast. One of the crucial problems is trying to answer the question if there is a dynamical relation between the two types of binaries in the sense that, as a consequence of the AML, the orbit of the detached systems will shrink, so that both components come in contact and produce a W UMa type binary. We discuss the relation between wind and starspots and the dependence of AML on the latitude of these spots. No obvious conclusion is possible concerning the shrinking of the orbit of RS CVn binaries. We show that other possibilities for orbits of detached systems with magnetic activity also exist.

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