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The Influence of Stellar System Age on exoplanetary Radio Emission

J.-M. Grießmeier (1), U. Motschmann (1), K.-H. Glassmeier (1), G. Mann (2) and H. O. Rucker (3)

(1) Technical University Braunschweig (j-m.griessmeier@tu-bs.de)
(2) Astrophysical Institute Potsdam
(3) Space Research Institute Graz

Magnetized giant exoplanets are believed to be strong nonthermal radio emitters. The anticipated radio flux is strong enough to allow ground-based detection using the next generation of instruments. At small orbital distances, the stellar wind velocity cannot be assumed to be independent of the orbital distance. Instead, the acceleration of the stellar wind with increasing distance has to be taken into account. Using a Parker-like model, we calculate stellar wind parameters for close-in exoplanets. Both solar-like stellar wind parameters as well as conditions corresponding to the young solar system (i.e. with increased stellar wind density and velocity) are considered. It is shown that young stellar systems are more favorable candidates for radio detection.