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Studying the evolution of a type III radio from the Sun up to 1 AU

Gottfried Mann (1), Frank Breitling (1), Christian Vocks (1), Richard Fallows (2), Valentin Melnik (3), and Alexander Konovalenko (3)

(1) Leibniz-Institut für Astrophysik Potsdam, Physik der Sonne, Potsdam, Germany (gmann@aip.de), (2) ASTRON, Netherlands Institute for Radio Astronomy, Postbus 2, 7990 AA Dwingeloo, Netherlands, (3) National Academy of Sciences of Ukraine, Institute of Radio Astronomy, 4 Chervonopraporna Str., Kharkov 61002, Ukraine

On March 16, 2016, a type III burst was observed with the ground-based radio telescopes LOFAR and URAN-2 as well as with the radiospectrometer aboard the spacecraft WIND.It started at 80 MHz at 06:37 UT and reached 50 kHz after 23 minutes. A type III burst are considered as the radio signature of an electron beam travelling from the corona into the interplanetary space. The energetic electrons carrying the beam excites Langmuir waves, which convert into radio waves by wave-particle interaction. The relationship between the drift rate and the frequency as derived from the dynamic radio spectra reveals that the velocity of the electrons generating the radio waves of the type III burst is increasing with increasing distance from the center of the Sun.