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### EVN detection of a compact radio source as a counterpart to Fermi J1418+3541

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Fermi J1418+3541 is a suspected blazar recently detected as a flaring gamma-ray point source, identified with likely radio, optical and infrared counterparts within the Fermi LAT error circle (Dutka et al. 2012, ATEL #[4643](#); Mahabal et al. 2012, ATEL #[4645](#); Bernieri et al. 2013, A&A, in press, [arXiv:1212.6868](#)).

We detected the proposed radio counterpart of Fermi J1418+3541 with the European VLBI Network ([EVN](#)), in real-time e-VLBI mode at 5 GHz on 2013 Jan 16 (project code RSF07). The source is dominated by a compact radio core, practically unresolved on intercontinental baselines from Europe to South Africa. The "core" flux density (34 +/- 2 mJy) is consistent with the historical single-dish values. The upper limit to its fitted angular size (Gaussian FWHM) is estimated as 0.20 mas in the ~E-W and 0.06 mas in the ~N-S direction. We derived a lower limit to its brightness temperature, ~10<sup>11</sup> K, which suggests Doppler-boosted radio emission from a relativistic jet oriented close to the line of sight, another strong indication of its blazar nature. There is a weak mas-scale jet-like extension seen in the W-NW direction from the core. The accurate position of the brightness peak is RA 14h18m28.58178s, Dec 35d42'49.4618" (J2000; formal uncertainty ~0.8 mas).

We thank the EVN PC chairman, Tom Muxlow for approving the short e-EVN observations, and the staff of the EVN and the observatories for carrying out the experiment. e-VLBI research infrastructure in Europe is supported by the European Union's Seventh Framework Programme (FP7/2007-2013) under grant agreement RI-261525 NEXPreS. The European VLBI Network is a joint facility of European, Chinese, South African and other radio astronomy institutes funded by their national research councils. We thank for the OTKA grant K104539.

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