Is the Quasar J1438+6211 a Compact Symmetric Object?

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Our object of interest, the bright radio-loud active galactic nucleus (AGN) J1438 +6211 (1437+624) is located at redshift $z = 1.094$. Its celestial coordinates are known in the optical (Gaia) and radio wavebands with sub-milliarcsecond precision. This AGN shows significant (10 mas-level) offset between its optical and radio positions. I analysed high-resolution very long baseline interferometry (VLBI) images obtained at 5 GHz with the European VLBI Network in 2022 and archival data at multiple radio frequencies covering more than two decades, in a hope to find the cause of this discrepancy. The radio source is resolved into two major components separated by about 100 milliarcseconds, corresponding to sub-kiloparsec projected linear size. Changes are not detectable either in their apparent distance or their relative position angle over decades. The observed radio structure and the large optical–radio offset suggest that J1438+6211 is a compact symmetric object, a powerful young jetted AGN whose radio emission originates from hotspots where the jet interacts with the surrounding interstellar medium. The optical position presumably pinpoints the location of the central supermassive black hole surrounded by a hot accretion disk.