The MU radar meteor head echo database

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The MU radar (Middle and Upper atmosphere radar) is a large atmospheric radar for observing the middle and the upper atmospheres. The radar frequency is 46.5 MHz VHF and the aperture of the antenna array is 8330 m² with 1MW output power. The ultra-multichannel digital receiving system was installed in 2004, which enabled a very precise observation of plasmas around meteors traveling very fast in the atmosphere. This radar has been successfully used for determining precise orbits of faint meteors including time evolution of meteor speed (or deceleration) during the interaction with the atmosphere. This technique is called meteor head echo observations of the MU radar [1], [2]. Orbits of faint meteors and interactions with atmosphere for more than 120,000 meteor events have been collected by intensive campaign observations as an open database. This database provides valuable dataset on orbit of faint meteors and interactions with the atmosphere broadly for researchers, educational staff, and other outreach activities in public.

References

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