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Radio observations of fast variations in microquasars

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Microquasars are the compact objects generally including accreting black holes which produce relativitic jets. The physical mechanisms of jet launching, collimation, and acceleration are poorly understood. Microquasars show strong variability in multi-wavelength observations. In X-rays, the sources show the fast variation features up to millisecond time scales, with the prominant quasiperiodic oscillations (QPOs) around 1 Hz - tens of Hz in light curves, however, physical origin of QPOs is still uncertain. FAST as the largest radio telescope provide the opportunity to study fast variability of both radio flux and polarization in microquasars. Firstly, we reported the first evidence of subsecond quasi-periodic oscillations of GRS 1915+105 in the radio band, providing the direct link between QPOs and the special dynamics of relativistic jets. In addition, we also at first time discover the similar oscillation beharviors of both flux and polarization in jets, which should provide a clear picture on the inner engine and magnetic configuration of relativistic jets. In near future, high time resolution radio monitoring of microquasars is expected to discover more new phenomena in black hole systems.

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