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Abstract:

The repeating fast radio burst (FRB) FRB 20201124A, which embedded in a highly magneto-dynamic environment of a barred/spiral galaxy, is one of the most active FRBs. We request FAST long-term and high cadence monitoring campaign. With subsequent polarimetry result, it can help us to do the following studies:

- 1) Periodicity: The regular observation will benefit us to search for the periodicity of such source, whether or not the periodicity can be found, it will give us a hint on the progenitor models.
- 2) Monitoring the rotation measure(RM) and dispersion measure(DM) evolution: We can obtain magnetic-ionic environment variation near source at a scale of 1 AU which is useful to constrain the system.
- 3) Polarisation oscillation structures: We can understand underlying physics for the interaction between the radio wave and magnetic plasma with more samples founded in long term observation. We can learn about the magnetic configuration at a distance scale of sub-AU to the source.
- 4) The scattering bandwidth and scintillation timescale evolution: The regular observation will illuminate the nature of the turbulence spectrum and properties of scattering screen.