

Circular Polarization of FRB: Bunching Coherent Curvature Radiation

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Coherent curvature radiation as the radiation mechanism for fast radio bursts (FRBs) has been discussed since FRBs were discovered. We study the polarization properties of FRBs. Emitted waves are highly linear polarized and polarization angles are flat across the burst envelopes, if the line of sight is confined to the beam within an angle of $1/\gamma$, while a circular polarization fraction becomes strong for off-beam cases.

Different kinds of evolutionary trajectories are found on the Poincaré sphere for the bunch-coherent polarization, and this behavior could be tested through future observations.

Topic

非吸积脉冲星、磁星和快速射电暴

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