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Abstract:

The energetics and central engines of Fast Radio Bursts (FRBs) are still mysterious, and it is unclear whether the subset of repeating FRBs are a function of their host environments or form an entirely different source class. Characteristics of the Persistent Radio Source (PRS) and its relation to FRB provide crucial clues to FRB's origin and surrounding environment. We propose multi-epoch sensitive VLBI observations of the only two repeating FRBs with confirmed compact PRS counterparts, namely FRB 121102 and FRB 190520. We request to conduct FAST observations in single dish mode using both the Pulsar and VLBI backends. Monitoring VLBI observations can reveal possible variability in location, physical size and flux of both FRB and its PRS, which allow us to distinguish models of FRB origin and offer a clue to their possible evolution.