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The MeerKAT relativistic binary timing programme

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Timing relativistic binary pulsar systems have enabled the measurements of precise neutron star masses and fundamental tests of gravity in the strong field regime. The measurement of neutron star masses not only provide insight into the elusive neutron star interior, but also help constrain binary evolution theories and supernova physics. For many binary systems in the southern hemisphere, the precision of these measurements have so far been limited by the sensitivity of radio telescopes. The new MeerKAT telescope, a 64-dish interferometer in South Africa that is an SKA-mid precursor, has overcome this limitation with its unparalleled sensitivity in the southern sky. The ongoing "RelBin" observing programme with MeerKAT is a part of the MeerTime large survey project that observes relativistic binary systems. In this talk, I will provide an overview of the RelBin programme and its goals, and discuss early results from the last 18 months of its operation.

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