Proposal Abstract:

CO/ONeMg white dwarf-millisecond pulsar binary are evolved via a common envelop phase, when these CO/ONeMg WD-MSP systems have a short orbital period of less than a few days. Systems with a wider orbit can be formed through stable mass transfer, i.e., the Case A or the early Case B Roche-lobe overflow (RLO). Observations of such binaries not only provide insight into stellar evolution in close, interacting binaries, but also offer unique opportunities for testing alternative gravitational theories, e.g., scalar-Tensor gravity. Compared to project PT2023_0084 in last year, systems with the GR effects measured are kept in this proposal to improve the precision of their PK parameters, and some newly discovered binary systems are included. We propose to observe 17 CO/ONeMg WD-MSP systems discovered by the GPPS survey with FAST, which aims at obtaining their phase-coherent timing solutions and PK parameters.