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## Evolution of the long-period pulsars with fallback discs

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Recently discovered long-period pulsars (LPPs), namely PSR J0901–4046 (76 s), GLEAM-X J162759.5–523504.3 (1091 s), and GPM J1839–10 (1318 s), have rotational periods much longer than those of radio pulsars and other isolated neutron star populations. LPPs exhibit transient pulsed-radio epochs with unusual and variable pulse shapes, similar to the radio behaviors of rotating radio transients (RRATs) and few radio emitting anomalous X-ray pulsars (AXPs) and soft-gamma repeaters (SGRs). The long-term evolutions of LPPs and their evolutionary connections with other isolated neutron star populations provide a significant test for the models. In the earlier applications of the fallback disc model to AXPs/SGRs, the simulations indicated that some of these sources with relatively strong dipole moments could evolve to long periods of LPPs. In this work, we have shown through numerical analysis that the properties of the three LPPs could be achieved by the neutron stars evolving with fallback discs and the dipole fields of conventional strength ( $\sim$  a few  $10^{12}$  G on the surface of the star).

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