Abstract Submitted
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A small magnetic inclination model for the paucity of accreting millisecond X-ray pulsars[1] STRATOS BOUTLOUKOS, University of Maryland, FREDERICK LAMB, KA HO LO, ROBERT CHAMBERLAIN, University of Illinois, M. COLEMAN MILLER, University of Maryland — Given their status as progenitors of rotation-powered millisecond radio pulsars, it is somewhat surprising that accretion-powered millisecond X-ray pulsars are so rare, and that all current examples are transient sources. We show that this and other phenomenology can be explained by a model in which the magnetic poles are close to one or both rotational poles. Accreting gas is therefore channeled close to the rotational poles, leading to oscillations that have low amplitudes, are nearly sinusoidal, and can exhibit large phase variations. We present general relativistic ray-tracing computations and population studies using such a model and compare the results with observations.

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