

IMPROVED MATHEMATICAL MODELING OF THE ANGULAR SIZE OF THE ROCHE LOBE

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We represent an improved approximation for the angular dimensions of the Roche lobe seen from the compact object in a close binary system. The initial approximation was published by Andronov (1992, *Astron. Astrophys. Transact.* 2, 341) with a corresponding maximal deviation of 0.002. The function, which is the ratio of the slowly computed accurate values to the approximation, is close to unity. We have determined correcting polynomials of fifth-order, thus decreasing the arbitrary error by ~4 orders of magnitude. The improved functions were applied to constrain geometrical and physical parameters of the newly discovered magnetic cataclysmic variable (eclipsing polar) OTJ 071126+440405=CSS 081231:071126+440405 using the duration of the abrupt eclipse of the emitting region by the white dwarf. For the maximal range of masses of the white dwarf 0.5-1.44 solar masses, the estimates of the inclination range from 79 to 82 degrees. The derived dependence leads either for a dependence of the orbital inclination on the mass ratio (with a fixed duration of eclipse), or to the dependence between other pairs of parameters, with a known third one.