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Approximate expressions for the mean longitudinal magnetic field, crossover effect and quadratic magnetic field are deduced in the frame of the modified magnetic charge description method for an ellipsoidal star, that is represented by the oblique rotator model with the centered symmetric magnetic dipole. For the mean crossover effect and the mean quadratic magnetic field the effect of stellar oblation increases their theoretical values (obtained for the case of spherically symmetric star) up to 12% and up to 8% respectively. That can lead to an essential overestimation of the magnetic dipole strength value obtained from the mean crossover effect and quadratic magnetic field observations if one does not pay attention to the ellipsoidal shape of investigated star. Neglecting the gravity-darkening phenomenon leads to further overestimation of the magnetic dipole strength. The value of this overestimation obtained on the base of the mean crossover effect observations is most sensitive to the increase of the gravity-darkening exponent and to the character of rotational law. The data of the mean longitudinal magnetic field provide a most correct estimation of the magnetic dipole strength value for an ellipsoidal star.
