North-south asymmetry of the sodium atoms distribution originated from Io

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In this study, we have made 2-dimensional observations of the sodium atoms distribution originated from Io. From observational results, it has been clarified that the distribution of atoms has north-south asymmetry with respect to the equatorial plane of Jupiter and this asymmetry varies with magnetic longitude of Io. We conclude that the temperature anisotropy of plasma which make the charge exchange with neutral atoms causes the observed north-south asymmetry. However, model results show that the north-south extension of atoms is slight and the asymmetry is not clear in the 2-dimensional distribution compared with observational results. In this presentation, we introduce the results of the modified model which include the disturbance of plasma environment near Io.