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B 会場 ：11/24　PM1 （13:15-15:15）
13:30〜13:45

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Whistler-driven electron precipitation by asymmetric loss cone in Mercury's miniature magnetosphere

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Mercury has a large loss cone difference in both northern and southern hemispheres due to the northward shifted magnetic dipole. It is predicted that the asymmetric loss cones can affect the whistler instability by the effects of the asymmetric temperature anisotropy and the asymmetric Lorentz and mirror forces in the north and south polar regions. To understand the effects of the energetic electron precipitation through electron – whistler interactions in Mercury's miniature magnetosphere, we compute the pitch angle scattering in two different cases for symmetric (the same loss cone size at the north and south polar regions) and asymmetric (an assumption of 10-deg. wider at the south polar region) bounce loss cones. In the computation results of both cases, we see clear prompt electron precipitation events driven by whistler-mode waves. In particular, the computation result in the asymmetric loss cone case shows more active electron precipitation at the northern hemisphere in comparison with that for the symmetric loss cone, because the whistler instability in the southern hemisphere is enhanced by the effects of the larger loss cone. In this presentation, we will present the significant difference of the electron precipitation driven by the nonlinear whistler instability in the two hemispheres in Mercury's miniature magnetosphere.