1155-92-59 **Yoichi Enatsu*** (yenatsu@rs.tus.ac.jp), 1-3 Kagurazaka, Shinjuku, Tokyo 162-8601, Japan, and **Takeo Ushijima** and **Emiko Ishiwata**. *Traveling wave for epidemic models with a free boundary.*

Free boundary problems are recently used to model phenomena of biological invasion for species such as migration into a new habitat (see, e.g., Du and Lin (2010) and references therein). These ideas are also applied to epidemic models. Kim et al. (2013) proposed an SIR epidemic model with free boundary to investigate the front motion of infected individuals spreading into a region where disease is not prevalent. In this presentation, we consider a simple diffusive epidemic model. Hosono and Ilyas (1995) and Kaellen (1984) proved the existence of traveling wave solutions of the model. We extend the results in Kaellen (1984) to the model with free boundary, namely we prove the existence of a semi wave solution (solutions propagating with the same profile and the same speed on a half space). We numerically observe the semi wave and the front motion of this model with free boundary. This is a joint work with Takeo Ushijima and Emiko Ishiwata. (Received December 09, 2019)