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Discontinuous model with semi analytical sheath interface for radio frequency plasma MASARU MIYASHITA, Sumitomo Heavy Industries, Ltd. — Sumitomo Heavy Industries, Ltd. provide many products utilizing plasma. In this study, we focus on the Radio Frequency (RF) plasma source by interior antenna. The plasma source is expected to be high density and low metal contamination. However, the sputtering the antenna cover by high energy ion from sheath voltage still have been problematic. We have developed the new model which can calculate sheath voltage wave form in the RF plasma source for realistic calculation time. This model is discontinuous that electronic fluid equation in plasma connect to usual passion equation in antenna cover and chamber with semi analytical sheath interface. We estimate the sputtering distribution based on calculated sheath voltage waveform by this model, sputtering yield and ion energy distribution function (IEDF) model. The estimated sputtering distribution reproduce the tendency of experimental results.

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