講演会のご案内

①量子科学技術研究開発機構嶋田先生の講演会

日　時：2017 年 12 月 8 日（金）9：00-11：30
場　所：応用力学研究所 2F 会議室
題　目：Introduction to divertor physics
講演者：量子科学技術研究開発機構　嶋田 道也 教授
概　要：A brief review will be given on the physics of divertor, which plays a very important role in magnetic confinement devices. The divertor "diverts" the power and particles coming out from the core plasma to a volume separated from the core. In the divertor, intense interaction between the plasma and the wall surface takes place, where significant　portion of the power from the core is deposited and particles are pumped out after many cycles of neutralization and reionization. Thus the components directly facing the hot core are protected from the intense heat and bombardment of plasma particles.

The hot core is protected from the direct ingress of impurities from the ivertor. Concentration of heat onto narrow zones in the divertor makes the heat removal from the divertor the most challenging issue of the fusion reactor design.

In the first part of this talk, various physical processes that characterize the divertor are reviewed, including collision, diffusion, sheath, presheath, ionization, charge exchange, recombination,radiation, retention, etc.

In the second part of the talk, heat load during transient processes, i.e.disruption and ELMs,are reviewed.

In the third part of the talk, we discuss how a liquid metal divertor can contribute to solution of these problems.

『プラズマ・核融合学会　九州・沖縄・山口支部　特別講演会』

②大阪大学大学院工学研究科　伊庭野先生の講演会

日　時：2017 年 12 月 8 日（金）11：30-12：00
場　所：応用力学研究所 2F 会議室
題　目：Simulation of vapor shielding at a solid wall by a weighted PIC method
講演者：大阪大学大学院工学研究科　伊庭野 健造 助教
概　要：Vapor shielding at solid walls are expected for a future fusion reactor in case of large heat load due to transient events. In order to estimate the dissipation of the incoming heat flux by the vapor shielding, a simulation code called PIXY using a weighted particle model is developed. The code is applied to the transient ELM heat flux for the reactor condition. It is found that the ion-neutral collision as well as radiative cooling is a dominant phenomenon for the heat flux dissipation. As the maximum heat flux becomes higher, oscillating phenomena appear remarkably, which have been observed in other experimental studies on vapor shielding.

【問い合わせ先】
世話人：応用力学研究所　花田 和明
連絡先：E-mail:hanada@triam.kyushu-u.ac.jp、tel: 092-583-7706