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Room:106



Time:May 22 09:30-09:45

Proton dynamics in ice VII

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Proton dynamics in the hydrogen bond of water molecules is a basic process of physical and chemical phenomena in many chemical and life systems [1]. In the previous talk[2], we examined the proton conductivity of ice VII [3], which may exist in astronomical icy bodies, in terms of transport theory of defects and molecular dynamics simulation. In this talk, we will examine the details of defect motion by visualization as well as heat conductivity and the modulated structures[4]

[1] M. Eigen and L. de Maeyer, Proc. R. Soc. Lond. A 247, 505 (1958).

[2] T. Iitaka, Abstract of Japan Geoscience Union Meeting 2011, SMP048-01.

T. Okada et al., Abstract of Japan Geoscience Union Meeting 2011, SMP048-02.

[3] E. Sugimura et al., Phys. Rev. B 77, 214103 (2008).

[4] P. Loubeyre et al., Nature 397, 503 (1999).

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