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Abstract for an Invited Paper
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Ab-initio simulations of liquid water: dielectric and hydrophobic effects[1]

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Hydrogen bonds are at the origin of many special properties of water. In this talk I will show how extensive *ab-initio* molecular dynamics simulations and simple theoretical models give insight on the structure and dynamics of the H-bond network. I will discuss in particular: (a) a study of the dielectric properties of water, based on simulations under a finite applied electric field, and (b) a study of the molecular origin of the hydrophobic effect, based on simulations of a solvated methane pair.

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