Difference in the generation of magnetic field between Ganymede and Europa

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Jovian icy satellite Ganymede has a strong intrinsic magnetic field which is one of most remarkable discoveries of Galileo spacecraft. This magnetic field is generally considered to be originated by self-excited dynamo activity (thermal and/or chemical convection) in the metallic core. It needs to On the other hand, Europa does not have large intrinsic magnetic field in spite of both satellites have a similar internal structure based on Galileo gravity field measurements, which consist of the outermost H2O layer, the rocky mantle, and the metallic core. We performed numerical simulations about the internal thermal history of Ganymede and Europa to express this difference of magnetic environment (and therefore thermal state of the core).