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**A statistical physics approach to the sine beta process**

The Sine process (corresponding to inverse temperature  $\beta$  equal to 2) is a well known determinantal point process. It appears as the bulk limit of some particle systems in various contexts (random matrix ensembles, zeros of L-functions, growth models etc.) Its universality properties are fascinating. More recently, Valko and Virag introduced a family of point processes as the bulk limit of Gaussian beta ensembles, for any positive  $\beta$ . As soon as  $\beta$  is different from 2, much less is known. In a work with David Dereudre, Adrien Hardy and Thomas Leblé, we use tools from classical statistical mechanics to better understand the Sine beta process.