ADDITION OF MATRICES AT HIGH AND LOW TEMPERATURES

VADIM GORIN

Abstract

In the random matrix theory an important role is played by the parameter Beta, which takes values 1, 2, or 4, depending on whether we deal with real, complex, or quaternion matrices. In the terminology of statistical mechanics, Beta is inverse-proportional to the temperature in the system. As it turns out, this parameter can also take arbitrary positive real values. We are going to discuss how to make sense of addition of matrices and cutting corners of matrices over the (non-existent) field of real dimension Beta and what is happening with these operations as Beta tends to 0 or to infinity.

University of Wisconsin - Madison
E-mail address: vadicgor@gmail.com