1086-05-16   **Alice Guionnet***, Ecole Normale Supérieure de Lyon, Lyon, France. *Free probability, Random matrices and map enumeration, II.*

Maps are connected graph which are properly embedded into a surface, their genus is the minimal genus of such a surface. Matrix integrals has been shown to be related with the enumeration of maps since the seventies, after the work of 't Hooft and Brézin-Itzykson-Parisi and Zuber. This is the so-called topological expansion. Such an expansion has been used in many fields of physics and mathematics. It will be at the center of this talk. Eventhough this talk is related with the previous one as free probability governs the first order of the expansion, this talk does not require to have followed the first talk. (Received April 10, 2012)