1167-05-83 **Hery Randriamaro***, Universität Kassel, Institut für Mathematik, Heinrich-Plett-Straße 40, 34132 Kassel, Germany. *The Determinant of a Hypergeometric Period Matrix.* Preliminary report.

A hypergeometric period matrix is a matrix indexed by the bounded chambers, or the polytopes in other words, of an essential hyperplane arrangement. Its entry in position (C, D) is an Euler-type integral on the polytope C with differential defined from the polytope D. It was introduced in 1990 by Varchenko who computed its determinant for a hyperplane arrangement in general position. Douai and Terao extended that computing to every essential hyperplane arrangement 7 years later. Furthermore, Richards and Zheng obtained in 2002 a specialized formula of that determinant for point arrangements, or when the polytopes are line segments. We are currently writing a survey mainly based on the work of Douai and Terao. Remark that the determinant of a hypergeometric period matrix allows to know if a solution set of a Knizhnik-Zamolodchikov equation forms a basis. It can also be regarded as Wronskian of a certain system of partial differential equations like the hypergeometric functions of type (n+1, m+1) treated by Kita. After having exposed the complete definition of a hypergeometric period matrix, we provide a computing sketch of its determinant. (Received February 17, 2021)