Picard-Vessiot Theory and Jacobian Problem

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In the talk we discuss the equivalence of various existing definitions of Picard-Vessiot extension for partial differential fields in zero characteristic and we give an equivalent statement of the Jacobian conjecture in terms of Picard-Vessiot extensions. Finally we point out differences and open questions related with the case of non-algebraically closed field of coefficients. Presented results are obtained in the collaboration with Teresa Crespo.