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Frédéric Brechenmacher* (`frederic.brechenmachher@math.cnrs.fr`), 72 rue Myrha, 75018 Paris, France. *On the universalization of matrix decomposition: algebraic practices and their circulations (1830-1930)*.

The elaboration of an international theory of matrices in the 1930s highlights the role played by a complex phenomenon of universalization of some methods of decompositions appealing to specific forms of representations. Although this phenomenon took place within no more than a decade, it appealed to the long term interrelations of various practices that used to have different identities and to circulate in distinct networks of texts. This phenomenon challenges not only the usual description of the history of algebra as a progress toward more and more abstraction, but also the importance that has been given to some specific domains or collectives. For instance, while the historiography of algebra has tended to lay the emphasis on German developments in algebraic number theory, the universalization of matrix decomposition highlights the key role played by some circulations of practices between French and American mathematicians at the beginning of the 20th century. The investigation of the identities taken on by such practices that circulated between what we would nowadays consider as various "disciplines" or "communities" raises issues related to the categories usually adopted to describe the collective organizations of knowledge or the social identities of groups of actors. (Received September 21, 2010)