Lattice paths, branched continued fractions, and multiple orthogonal polynomials

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I will present an overview of the recently found connection between multiple orthogonal polynomials and branched continued fractions that arise as generating functions of lattice paths and were introduced to solve total-positivity problems of combinatorial interest. Production matrices and total positivity play an important role in this connection. I start by giving a brief introduction to the different topics involved in this talk and then I explain how the study of their connection brings to light new results on different fields, with emphasis on the results about multiple orthogonal polynomials.