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Vortrag: A nonclassical determinantal formula for the classical discriminant

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The classical discriminant of degree- n polynomials is a formula which determines whether a polynomial $f(x)$ of degree n has a repeated root. Several mathematicians in the 18th and 19th centuries devised ways to represent the discriminant as the determinant of a matrix, however all such classical presentations are equivalent in the sense that they have isomorphic cokernels. In this talk, I will describe a nontrivial determinantal presentation of the discriminant which is not equivalent to the classical ones. It is an explicit construction of the presentation matrix of the so-called "open swallowtail" defined by Arnold as a module over the coordinate ring of the hypersurface defined by the discriminant.

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