

Matrix factorizations for domestic singularities

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We classify matrix factorizations for vector bundles on weighted projective lines corresponding to singularities given by the equation $f = X_1^a + X_2^b + X_3^c$, where the sequence (a, b, c) is of domestic type. This problem is related to the study of Cohen—Macaulay modules over the associated algebra $S = k[x, y, z]/(f)$ or equivalently to the derived singularity category of S in the sense of Buchweitz and Orlov. By recent *joint work with Kussin and Lenzing* there are also connections to stable vector categories over the associated weighted projective lines.

Such matrix factorizations have been also studied by Kajiura, Saito and Takahashi using different methods, in contrast to them we work over an arbitrary closed field of arbitrary characteristic.

Joint work with Dawid Kedzierski and Helmut Lenzing.

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