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Michael Brown* (mbrown15@math.unl.edu). *Matrix Factorizations and the K-theory of the Milnor Fiber*. Preliminary report.

Let Q denote the polynomial ring $\mathbb{C}[x_1, \dots, x_n]$, and suppose f is a nonzero element of the homogeneous maximal ideal of Q . One may associate to the pair (Q, f) a triangulated category $[\text{MF}(Q, f)]$, the *homotopy category of matrix factorizations* of f over Q . I will discuss a homomorphism from the Grothendieck group of this triangulated category into the topological K-theory of the Milnor fiber of f , and I will show how one may use this map to demonstrate precise senses in which various algebraic properties of the ring $Q/(f)$ are manifestations of topological properties of the Milnor fiber of f . (Received December 26, 2014)