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**Gabriel D Kerr\*** ([gdkerr@math.ksu.edu](mailto:gdkerr@math.ksu.edu)), Mathematics Department, 138 Cardwell Hall,  
Manhattan, KS 66506. *Tropical Morse functions and their homological mirrors.*

The homological mirror symmetry conjecture applies to a wide range of algebraic varieties. In this talk, I will discuss the conjecture for a complete  $n$ -dimensional toric variety  $X$ . The conjecture in this case equates the derived category of coherent sheaves on  $X$  with the Fukaya-Seidel category  $FS(W)$  of a Landau-Ginzburg (LG) model  $W : (\mathbb{C}^*)^n \rightarrow \mathbb{C}$ . By studying a tropical version of the LG model, I will show how  $FS(W)$  can be decomposed into several basic categories. Each of these categories arises from passing through the tropical version of a Morse critical point. I will conclude with a discussion of the mirror to this decomposition which is the semi-orthogonal decomposition of  $D^b(X)$  arising from a minimal model run. (Received September 16, 2013)