Non-commutative desingularizations and MCM modules

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I will describe some recent work on non-commutative analogs of resolutions of singularities, with a focus on the contribution made by maximal Cohen-Macaulay modules. This will include an overview of some approaches to non-commutative desingularizations in general, with specific attention to Van den Bergh's definition of a non-commutative crepant resolution. A key motivating example is Auslander's algebraic McKay correspondence between MCM modules over the Kleinian singularities, skew group rings of the binary polyhedral groups, and the affine ADE Coxeter-Dynkin diagrams.