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Minimality and Jump Classes.
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We study the connections between two important notions about the Turing degrees: minimality and jump classes. Both notions give some approximations or measurements of how close a degree is to being recursive, and so it is natural to ask how these two measurements are related to each other.

The first breakthrough is a theorem by Jockusch and Posner that all minimal degrees are $\mathbf{GL}_2$. Later Lerman observed that this is also true for all degrees below $\mathbf{0}'$ with the finite maximal chain property in place of minimality (intuitively, a degree has the finite maximal chain property if it is finitely many "minimality steps" from $\mathbf{0}$.) It is then natural to ask (as Lerman did) whether this result can be generalized to all Turing degrees, i.e., whether it is true that by iterating the minimality relation one can only get $\mathbf{GL}_2$ degrees.

We will present a negative solution to this question by building a $\mathbf{GH}_2$ minimal cover of a minimal degree, that is, there is a $\mathbf{GH}_2$ degree which is "two steps" from $\mathbf{0}$. We will show some relevant results which guide us step by step in our construction.