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Toric degenerations of incomplete flag varieties and their Schubert varieties.

In 2005, Mikhail Kogan and Ezra Miller constructed an explicit toric degeneration of the complete flag variety built from $GL_n(\mathbb{C})$ by realizing the special toric fiber as the result of a “twisting” of a family of flag varieties. Here, we extend the result by exhibiting a similarly concrete toric degeneration of *incomplete* flag varieties built from $GL_n(\mathbb{C})$ and detail what happens to their Schubert varieties. In addition, we indicate how we can modify our approach to accommodate toric degenerations of flag varieties built from algebraic groups of different type, and use our constructed degenerations to compute some equivariant cohomology of the varieties involved. (Received September 23, 2015)