1064-37-187 **Roland Roeder*** (rroeder@math.iupui.edu), IUPUI Department of Mathematical Sciences, LD Building, Room 224Q, 402 North Blackford Street, Indianapolis, IN 46202. *A fundamental dichotomy for Fatou components of polynomial skew products.*

We consider polynomial maps of the form $f(z, w) = (p(z), q(z, w))$ that extend as holomorphic maps of $\mathbb{CP}^2$. In an early paper on such maps, Mattias Jonnson introduced a notion of connectedness that is analogous to connectivity for the Julia set of a polynomial map in one-variable. We prove the following "Fundamental Dichotomy": if f is an Axiom-A polynomial skew product, and f is connected, then every Fatou component of f is homeomorphic to an open ball; otherwise, some Fatou component of f has infinitely generated first homology. (Received September 08, 2010)