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**Suzanne Lynch Hruska\***, University of Wisconsin Milwaukee, PO Box 413, Milwaukee, WI 53211, and **Roland K. W. Roeder**. *Topology of Fatou Components for Endomorphisms of  $\mathbb{CP}^2$ : linking with the Green's Current.*

Little is known about the global topology of Fatou components for holomorphic endomorphisms  $f : \mathbb{CP}^2 \rightarrow \mathbb{CP}^2$ . We develop a type of linking number between closed loops in the Fatou set of  $f$  with the Green's current  $T$ , which forms the complement of the Fatou set. Using these linking numbers we establish that many classes of endomorphisms have Fatou components with infinitely generated first homology; for example, polynomial endomorphisms of  $\mathbb{CP}^2$  for which the restriction to the line at infinity is hyperbolic and has disconnected Julia set, and polynomial skew products of  $\mathbb{CP}^2$  such that the vertical Julia set in an appropriate slice is disconnected. We conclude with some concrete examples and questions for further study. (Received April 12, 2010)