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Spencer Backman* (spencerbackman@gmail.com). *Riemann-Roch theory for graph orientations.*

We introduce an equivalence relation on the set of partial orientations of a graph, which generalizes Gioan's cycle-cocycle reversal system. We explain how this setup allows for a new interpretation of the linear equivalence of divisors on graphs (chip-firing), and a new proof of Baker and Norine's combinatorial Riemann-Roch formula. Fundamental connections to the max-flow min-cut theorem will be highlighted. (Received August 30, 2014)