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Patricia Cahn. *Trisections of singular branched covers between four-manifolds.*

We consider branched covering maps $f : Y \rightarrow S^4$, where Y is a closed oriented four-manifold and the branching set of f is embedded in the four-sphere with a cone singularity. I will sketch a method to produce a trisection of Y from a singular triplane diagram of the pair (S^4, B) . I will construct infinite family of three-fold covers $f_i : Y_i \rightarrow S^4$, branched along pairwise non-isotopic singularly embedded two-spheres. With the help of trisections, I will prove that, for each i in this construction, Y_i is diffeomorphic to $\mathbb{C}\mathbb{P}^2$. Time-permitting, I will explain how a homotopy ribbon obstruction (for the knot describing the singularity type) arises in this setting. Joint work with Patricia Cahn. (Received February 19, 2018)