1116-05-1463 **Steven Schluchter*** (sschluch@gmu.edu), Department of Mathematical Sciences, George Mason University, 4400 University Drive, MS: 3F2, Fairfax, VA 22312, and **Justin Z Schroeder**.

Self-dual embeddings of $K_{4m,4n}$ in pseudosurfaces.

A pseudosurface is the result of identifying a finite number of points of a surface. A proper embedding of a graph G in a pseudosurface P is an embedding in which the regions of the complement of G in P are homeomorphic to discs and pinchpoints of P correspond to vertices in G. We say that a proper embedding of a graph G in a pseudosurface P is self dual if there exists an isomorphism from G to its topological dual. We give an explicit construction of a self-dual embedding of the complete bipartite graph $K_{4m,4n}$ in an orientable pseudosurface for all $m,\ n \geq 1$, which maximizes the number of umbrellas of each vertex and has the property that for any vertex v of $K_{4m,4n}$, there is a face of the constructed embedding that intersects all umbrellas of v. Leveraging these properties, and applying a lemma of Bruhn and Diestel, we apply a surgery introduced here and a different known surgery of Edmonds to each of our constructed embeddings for which at least one of $m, n \geq 1$, we show that there exist several distinct orientable and nonorientable pseudusorfaces with the same Euler characteristic that feature a self-dual embedding of $K_{4m,4n}$. (Received September 20, 2015)