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G. Cazassus, C. Herald* (herald@unr.edu), **P. Kirk** and **A. Kotelskiy**. *The correspondence induced on the pillowcase by the earring tangle.*

When a knot K is decomposed into two tangles by cutting along a 2-sphere meeting K at four points, the tangle traceless $SU(2)$ character varieties produce Lagrangian submanifolds in the traceless character variety of the 4-punctured sphere, known as the pillowcase. With Hedden and Kirk, we used these to define a pillowcase homology for the tangle pair, conjecturally a symplectic counterpart to Kronheimer and Mrowka's singular instanton homology of $I(K)$.

This talk will explore the effect of adding an earring to the knot, a mechanism used to avoid reducible connections in the definition of $I(K)$. Placing the earring in a collar neighborhood of the splitting sphere, the traceless character variety of the trivial 4-strand tangle with the earring in the collar gives an immersed Lagrangian correspondence between the two pillowcases. We'll describe this correspondence and its action on Lagrangians in the pillowcase.

We'll highlight one instance where the earring tangle correspondence appears to illustrate figure eight bubbling, a degeneration phenomenon predicted by Bottman and Wehrheim, and the related notion of a bounding cochains used to extend quilted Floer homology to the immersed setting. This is joint work with G. Cazassus, P. Kirk. and A. Kotelskiy. (Received January 16, 2022)