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Conforti Ave, West Orange, NJ 07052. *Tangle decompositions of alternating link complements.*

Decomposing knots and links into tangles is a useful technique for understanding their properties. The notion of prime tangles was introduced by Kirby and Lickorish; Lickorish proved that by summing prime tangles one obtains a prime link. In a similar spirit, summing two prime alternating tangles will produce a prime alternating link, if summed correctly with respect to the alternating property. Given a prime alternating link, we seek to understand whether it can be decomposed into two prime tangles each of which is alternating. We refine results of Menasco and Thistlethwaite to show that if such a decomposition exists either it is visible in an alternating link diagram or the link is of a particular form, which we call a pseudo-Montesinos link. This is joint work with Joel Hass and Abigail Thompson. (Received August 11, 2020)