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**Masaharu Ishikawa** (ishikawa@math.tohoku.ac.jp), **Thomas W Mattman\***  
(TMattman@CSUChico.edu) and **Koya Shimokawa** (kshimoka@rimath.saitama-u.ac.jp).

*Tangle sums and factorization of A-polynomials.*

We show that there exist infinitely many examples of pairs of knots,  $K_1$  and  $K_2$ , that have no epimorphism  $\pi_1(S^3 \setminus K_1) \rightarrow \pi_1(S^3 \setminus K_2)$  preserving peripheral structure although their A-polynomials have the factorization  $A_{K_2}(L, M) \mid A_{K_1}(L, M)$ . Our construction accounts for most of the known factorizations of this form for knots with 10 or fewer crossings. In particular, we conclude that while an epimorphism will lead to a factorization of A-polynomials, the converse generally fails. (Received March 04, 2011)