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Martin Scharlemann* (mgscharl@math.ucsb.edu), Mathematics Department, UC Santa Barbara, Santa Barbara, CA 93106. *Straightening tube sums.*

Suppose the complement of a 3-manifold $W \subset S^3$ contains an incompressible torus T . Then there is a natural way to reimbed W in a typically simpler form, namely reimbed the solid torus that T bounds in S^3 as an unknotted solid torus. When T is of higher genus there is not such a natural choice of reimbedding. For the special genus two case in which T is a tubed sum of two distant tori there is a natural choice. We show how this case suffices as a 3-dimensional tool to prove the genus three, 4-dimensional Schoenflies Conjecture. (Received September 20, 2006)