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Keith Burns* (burns@math.northwestern.edu), Department of Mathematics, Northwestern University, Evanston, IL 60208, and **Benjamin Schmidt** (bischmid@uchicago.edu), Department of Mathematics, University of Chicago, Chicago, IL 60637. *Conjugate points and non injectivity of the exponential map.*

It is well known that if $v \in T_p M$ is a vector such that p and $q = \exp_p(v)$ are conjugate along the geodesic tangent to v , then \exp_p is non injective in any neighbourhood of v . This means one can find geodesics starting at p with initial tangent vectors v' and v'' close to v that intersect close to q .

Ben Schmidt and I have sharpened this result by showing that can always choose one of the vectors v' and v'' to be v . (Received January 12, 2009)