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John C Wood* (j.c.wood@leeds.ac.uk), Prof John C Wood, School of Mathematics,
University of Leeds, LS16 7QJ Leeds, England. *Jacobi fields along harmonic maps.*

In [On the space of harmonic 2-spheres in CP^2 , Internat. J. Math. **7** (1996), 211–225] we describe the space of harmonic 2-spheres in CP^2 as a smooth submanifold of the space of all C^k maps ($k > 1$). There remained the question of whether all Jacobi fields along such harmonic maps are integrable, i.e. do they arise from variations through harmonic maps? The authors answered this affirmatively for harmonic 2-spheres in the complex projective plane, see [Jacobi fields along harmonic 2-spheres in CP^2 are integrable, J. London Math. Soc. **66** (2002), 468–486]. In contrast, the answer is negative for harmonic 2-spheres in a sphere. The affirmative answer implies that the Jacobi fields form the tangent bundle to each component of the manifold of harmonic maps from S^2 to CP^2 , thus giving the nullity of any such harmonic map; it also has bearing on the behaviour of weakly harmonic E-minimizing maps from a 3-manifold to CP^2 near a singularity and the structure of the singular set of such maps from any manifold to CP^2 . (Received February 09, 2004)