HARMONIC MAPS FROM THE COMPLEX PROJECTIVE LINE INTO COMPLEX QUADRICS

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We address a classification problem of harmonic maps from the complex projective line into complex hyperquadrics. We mainly discuss harmonic maps satisfying an *Einstein-Hermitian* condition. Such a map is obtained as the minima of a functional on the space of maps into Grassmannians. When the target is a symmetric space of rank one, the E-H condition is reduced to the condition that the map has constant energy density. In our case, harmonic maps with E-H condition has another geometric properties.

A moduli space of harmonic maps with the E-H condition and the *gauge* condition is described by means of generalized do Carmo-Wallach theory. We also show a one-to-one correspondence between the moduli of E-H harmonic maps with the gauge condition and the moduli of *holomorphic isometric* embeddings of the complex projective line into quadrics with the same degree.

Finally, we shall also give a few applications.

This work is a collaboration with Professor O.Macia.

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