

On the Betti map associated to abelian logarithms

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Given an abelian scheme provided with a section, one can locally express an abelian logarithm of the section in a local basis for the periods, obtaining the so called Betti coordinates of the section. In a joint work with Y. André and U. Zannier, we studied the differential of this map, proving under certain conditions that it is a submersion. It turned out that these conditions are somewhat linked with the Kodaira-Spencer map of the abelian fibration. In the particular case of the universal hyper-elliptic scheme, we obtain explicit and general results, and show a curious application.