

TORUS FIBRATIONS AND LOCALIZATION OF INDEX

TAKAHIKO YOSHIDA

I will describe a localization of index of a Dirac type operator. We make use of a structure of torus fibration, but the mechanism of the localization does not rely on any group action. In the case of Lagrangian fibration, we show that the index is described as a sum of the contributions from Bohr-Sommerfeld fibers and singular fibers. To show the localization we introduce a deformation of a Dirac type operator for a manifold equipped with a fiber bundle structure which satisfies a kind of acyclic condition. The deformation allows an interpretation as an adiabatic limit or an infinite dimensional analogue of Witten deformation.

Joint work with Hajime Fujita and Mikio Furuta.

DEPARTMENT OF MATHEMATICS, GRADUATE SCHOOL OF SCIENCE AND TECHNOLOGY,
MEIJI UNIVERSITY, 1-1-1 HIGASHIMITA, TAMA-KU, KAWASAKI 214-8571, JAPAN

E-mail address: `takahiko@math.meiji.ac.jp`