

第21回

- 講演者： **Thomas Wieber** 氏 (ハイデルベルク大学)
 - 題目 Geometrically proven structure theorems for vector valued Siegel modular forms
 - 日時：平成26年3月7日（金）16：30～17：30

I shall begin with classical results on vector valued (cuspidal) Siegel modular forms. Afterwards, I shall present new structure theorems for vector valued Siegel modular forms with respect to (Sym^2) and Igusa's subgroup $(\Gamma_2[2,4])$. They rest on the well known fact that (Γ) -invariant tensor fields on the Siegel upper halfplane can be viewed as vector valued Siegel modular forms with respect to this group (Γ) . For our group the Satake compactification is the 3-dimensional projective space. After observing the tensors on the Satake compactification the structure theorem(s) and Hilbert function(s) for the representation Sym^2 become rather evident. Here, we discovered a new strategy to retrieve structure theorems for other appropriate groups. Examples executed by Freitag, Salvati Manni and partially the speaker include the groups of genus two $(\Gamma_2[4,8])$ and $(\Gamma_2[2,4,8])$ and even one of Igusa's subgroups of genus 3 $(\Gamma_3[2,4])$. Using invariant theory we could reprove Aoki's structure theorem for $(\Gamma_{2,0}[2])$ and Clery's van der Geer's and Grushevsky's structure theorem for $(\Gamma_2[2])$ and (Sym^2) .



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Last update: **2017/11/16 19:34**



