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- **Thomas Wieber** (　　　　　　　)
  - ⬚Geometrically proven structure theorems for vector valued Siegel modular forms
  - 　　　　26　3　7　　　　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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