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Im Rahmen der

# AG Komplexe Analysis

laden wir zu folgendem Vortrag ein:

### Limit of Bergman kernels on a tower of coverings of compact Kähler manifolds

### Dr. Jihun Yum, Center for Complex Geometry (Korea)

am **Donnerstag, den 22.12.2022, um 16 Uhr c.t. in G.15.25**.

**Abstract:** The Bergman kernel $B_X$, which is by the definition the reproducing kernel of the space of $L^2$ holomorphic $n$-forms on a $n$-dimensional complex manifold $X$, is one of the important objects in complex geometry. In this talk, we observe the asymptotics of the Bergman kernels, as well as the Bergman metric, on a tower of coverings. More precisely, we show that, for a tower of finite Galois coverings $\{\phi_j : X_j \to X\}$ of compact Kähler manifold $X$ converging to an infinite Galois covering $\phi : \widetilde{X} \to X$, the sequence of push-forward Bergman kernels $\phi_{j*}B_{X_j}$ locally uniformly converges to $\phi_* B_{\widetilde{X}}$. Also, as an application, we show that sections of canonical line bundle $K_{X_j}$ for sufficiently large $j$ give rise to an immersion into some projective space, if so do sections of $K_{\widetilde{X}}$. This is a joint work with S. Yoo at Incheon National University.

### References

[1] H. Baik, F. Shokrieh and C. Wu, *Limits of canonical forms on towers of Riemann surfaces*, J. Reine Angew. Math. (Crelle's Journal) (2020)

[2] S. Yoo and J. Yum, *Limit of Bergman kernels on a tower of coverings of compact Kähler manifolds*, arXiv:2202.01638 (2022)

Alle Interessenten sind herzlich eingeladen!

gez. Prof. N. Shcherbina