FOURIER-MUKAI TRANSFORM AND VECTOR BUNDLES ON ABELIAN VARIETY

ABSTRACT. It's paper reading seminar about Fourier-Mukai transform and its applications on vector bundles on abelian varieties.

SCHEDULE

Talk 1: Background and preliminaries (Songsong Huang 09/12).

Talk 2: Fourier-Mukai interpretation of Atiyah's classical classification (Bowen Liu 09/19).

(1) [Bha17, Chapter 7].

Talk 3: Picard functor and Poincaré bundle (Songsong Huang 09/26).

Talk 4: Homogenous bundle on abelian variety (Bowen Liu 10/10).

(1) [Muk78, Section 4].

Talk 5: Semi-homogenous bundle on abelian variety I (Songsong Huang 10/19).

(1) [Muk78, Section 1].

Talk 6: Semi-homogenous bundle on abelian variety II (Bowen Liu 10/24).

(1) [Muk78, Section 2].

Talk 7: Semi-homogenous bundle on abelian variety III (Songsong Huang 10/31).

(1) [Muk78, Section 3, Section 5].

Talk 8: Fourier-Mukai transform and stability (Bowen Liu 11/7).

(1) [Yos01, Proposition 3.2, Proposition 3.5].

References

[Bha17] Bhargav Bhatt. Abelian varieties. https://www.math.ias.edu/~bhatt/teaching/mat731f17/lectures.pdf, 2017.

[Muk78] Shigeru Mukai. Semi-homogeneous vector bundles on an Abelian variety. *J. Math. Kyoto Univ.*, 18(2):239–272, 1978.

[Yos01] Kota Yoshioka. Moduli spaces of stable sheaves on abelian surfaces. *Math. Ann.*, 321(4):817–884, 2001.