

READING SEMINAR ON NON-ARCHIMEDEAN GEOMETRY

1. BASICS

We mainly follow the first 3 chapters of Berkovich's book and Jonsson's lecture notes.

- (1) *Overview, elementary introduction and syllabus.*
Speaker: J. Xiao (THU), 03/13.
- (2) *B 1.1-1.3 or J 2-3: Banach rings, the spectrum, properties of the spectrum.*
Speaker: Y. Yuan (THU), 03/20.
- (3) *B 1.4-1.5 or J 4-6: Examples, analytic spaces over a commutative Banach rings.*
Speaker: S. Xie (AMSS), 03/27.
- (4) *B 2.1 or J 7-9: Affinoid algebras.*
Speaker: F. Ballay (PKU), 04/03.
- (5) *B 2.2-2.3 or J 10-14: Affinoid domains, affinoid spaces.*
Speaker: Adidya (PKU), 04/10.
- (6) *B 2.4-2.6 or J 15-18: The reduction map, the relative interior, analytic functions on a closed set.*
Speaker: J. Liu (AMSS), 04/17.
- (7) *B 3.1-3.3 or J 19-21: Analytic spaces, connections with rigid analytic geometry.*
Speaker: Z. Tian (PKU), 04/24.
- (8) *B 3.4-3.6 or J 22: GAGA, meromorphic functions.*
Speaker: Q. Yin (PKU), 05/08.

2. INTERACTIONS WITH OTHER SUBJECTS

We mainly consider degenerations of algebraic varieties (relations with birational geometry), potential theory in non-Archimedean geometry and complex dynamics.

- (1) *Weight functions on non-archimedean analytic spaces and the Kontsevich-Soibelman skeleton (by Mustata-Nicaise).*
Speaker: Z. Tian (PKU), 05/15.
- (2) *The essential skeleton of a degeneration of algebraic varieties (by Nicaise-Xu).*
Speaker: J. Liu (AMSS), 05/22.
(Note: There is also a survey paper by Nicaise.)
- (3) *Tropical and non-Archimedean limits of degenerating families of volume forms (by Boucksom-Jonsson).*
Speaker: J. Xiao (THU), 06/05.
- (4) *Valuations and PSH singularities (by Boucksom-Favre-Jonsson).*
- (5) *Singular semipositive metrics in non-Archimedean geometry (by BFJ).*
- (6) *Solutions to non-Archimedean Monge-Ampère equations (by BFJ).*
Speakers: Q. Lu (PKU) and J. Xiao (THU), 06/12, 06/19.
(Note: There is also a survey paper by Jonsson.)
- (7) *Dynamical compactifications of \mathbf{C}^2 (by Favre-Jonsson).*
- (8) *Degeneration of endomorphisms of the complex projective space in the hybrid space (by Favre).*
Speaker: J. Liu (AMSS), 06/26.

Some other topics: topology of Berkovich analytic spaces, forms and currents on Berkovich spaces, model theory in non-Archimedean geometry, tropicalization, SYZ, etc..