

# Schedule for the summer school on group schemes at CIRM

## Monday August 29

9h : Presentation

9h10-10h40 : Sylvain BROCHARD : Grothendieck topologies, descent, quotient, I

11h-12h30 : Joseph OESTERLÉ : Groups of multiplicative type and subtori of group schemes, I

14h15-14h50 : Question session

15h - 16h30 : Abdallah MOKRANE : Formal groups, I

17h-18h30 : Ariane MÉZARD : Extension of rational laws, I

## Tuesday August 30

9h-10h30 : Sylvain BROCHARD : Grothendieck topologies, descent, quotient, II

11h-12h30 : Joseph OESTERLÉ : Groups of multiplicative type and subtori of group schemes, II

14h15-14h50 : Question session

15h - 16h30 : Abdallah MOKRANE : Formal groups, II

17h-18h30 : Matthieu ROMAGNY : Extension of rational laws, II

## Wednesday August 31

9h00-10h30 : Sylvain BROCHARD : Grothendieck topologies, descent, quotient, III

11h-12h30 : Joseph OESTERLÉ : Groups of multiplicative type and subtori of group schemes, III

## Thursday September 1<sup>st</sup>

9h00-10h30 : Joseph OESTERLÉ : Groups of multiplicative type and subtori of group schemes, IV

11h-12h30 : Laurent FARGUES, Formal groups III

15h15-15h50 : Question session

16h - 17h30 : Sylvain BROCHARD : Grothendieck topologies, descent, quotients, IV

18h-19h : Fabrice ORGOGOZO : Extended fundamental group.

## Friday September 2

9h00-10h30 : Ariane MÉZARD, Extension of rational laws, III

11h-12h30 : Brian CONRAD, Unipotent groups in positive characteristic (after J. Tits) I

15h15-15h50 : Question session

16h - 17h30 : Laurent FARGUES, Formal groups IV

18h-19h : Cyrille DEMARCHE : Non-abelian Hochschild cohomology and extension of group schemes.

## Saturday September 3

9h00-10h30 : Brian CONRAD : Unipotent groups in positive characteristic (after J. Tits) II

11h-12h : Ting-Yu LEE : The adjoint quotient of Chevalley group schemes.

## Monday September 5

9h00-10h30 : Benedict GROSS : Reductive groups over fields

11h-12h30 : Brian CONRAD : Centralisers, normalizers and quotients

15h15-15h50 : Question session

16h - 17h30 : Jiu-Kang YU : Reductive group schemes and scheme of maximal tori.

18h-19h : Jilong TONG : Unipotent group schemes (after Dolgachev-Weisfeiler)

## Tuesday September 6

9h00-10h30 : Brian CONRAD : Roots, coroots and classification in rank 1

11h-12h30 : Jiu-Kang YU : The big cell, parabolic subgroup schemes.

15h15-15h50 : Question session

16h - 16h50 : Jean FASEL : Classical group schemes I

17h-17h50 : Baptiste CALMÈS : Classical group schemes II

18h15-19h15 : Simon PEPIN LE HALLEUR : The Borel-de Siebenthal theorem.

## Wednesday September 7

9h00-10h30 : Brian CONRAD : The existence theorem and the isomorphism theorem.

11h-12h30 : Benedict GROSS : Group schemes over  $\text{Spec}(\mathbb{Z})$ .

16h-17h : Gopal PRASAD : Bruhat-Tits theory and non-reductive group schemes.

17h15-18h15 : Michel DEMAZURE : Reminiscences.

19h30 : Workshop Dinner.

## Thursday September 8

9h-9h50 : Wilberd van der KALLEN : Cohomological finite generation for reductive groups

10h-10h50 : Anastasia STAVROVA : On the Grothendieck-Serre's conjecture on rationally trivial torsors.

11h20-12h10 : Ofer GABBER : Around pseudo-reductive groups

17h-17h50 : Fei XU : Strong approximation for homogeneous spaces.

18h-18h50 : Bruno KLINGLER : From arithmetic groups to the André-Oort's conjecture.

## Friday September 9

9h-9h50 : Pierre CARTIER : From formal groups to algebraic groups : the development of Hopf algebras.

10h-10h50 : Arturo PIANZOLA : A prescient SGA3 : The status of affine (and extended affine) Kac-Moody algebras circa 1963.

11h20-12h10 : Dajano TOSSICI, Models of group schemes of roots of unity.

14h00-14h50 : Brian CONRAD : Arithmetic of algebraic groups in positive characteristic.

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