

**Representation Theory XIII**  
**IUC, Dubrovnik, Croatia, June 21 – 27, 2013**

**Schedule**

**Friday, June 21**

9:00 – 9:50	<b>Michel Duflo</b>	On quasi-reductive Lie algebras
10:00 – 10:50	<b>Jing-Song Huang</b>	Dirac cohomology and generalization of classical branching rules
<b>Chair: Hrvoje Kraljević</b>		

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10:50 – 11:10	<b>Coffee break</b>	
11:10 – 12:00	<b>Alex Feingold</b>	Applications of vertex operator constructions and character theory to branching problems for level one representations of affine Kac-Moody algebras
12:10 – 13:00	<b>Cristian Lenart</b>	Kirillov-Reshetikhin crystals, Macdonald polynomials, affine Demazure characters and combinatorial models
<b>Chair: James Lepowsky</b>		

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16:00 – 16:50	<b>Corina Calinescu</b>	Vertex-algebraic structure of principal subspaces of standard $A_2^{(2)}$ -modules
16:50 – 17:10	<b>Coffee break</b>	
17:10 – 17:50	<b>Tomislav Šikić</b>	Construction of combinatorial bases for basic modules of affine Lie algebras of type $C_n^{(1)}$
18:00 – 18:40	<b>Robert McRae</b>	Vertex algebraic structure in integral forms of standard affine Lie algebra modules
<b>Chair: Antun Milas</b>		

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**Saturday, June 22**

9:00 – 9:50	<b>Hadi Salmasian</b>	A rigidity property of the automorphic representations of adèle groups
10:00 – 10:50	<b>Dan Ciubotaru</b>	The Dirac operator and discrete series for affine Hecke algebras
<b>Chair: Dragan Miličić</b>		

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10:50 – 11:10	<b>Coffee break</b>	
11:10 – 12:00	<b>Katrina Barron</b>	Permutation twisted modules for tensor product vertex operator superalgebras
12:10 – 13:00	<b>James Lepowsky</b>	An introduction to logarithmic tensor category theory
<b>Chair: Mirko Primc</b>		

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16:00 – 16:50	<b>Slaven Kožić</b>	Principal subspaces for quantum affine algebra $U_q A_n^{(1)}$
16:50 – 17:10	<b>Coffee break</b>	
17:10 – 17:50	<b>Marijana Butorac</b>	Quasi-particle bases of principal subspaces for affine Lie algebra of type $B_2^{(1)}$
18:00 – 18:40	<b>Carly Brigs</b>	An efficient algorithm for the energy function in type B
<b>Chair: Naihuan Jing</b>		

### Monday, June 24

9:00 – 9:50 **Naihuan Jing** Wedge modules for two-parameter quantum algebras

10:00 – 10:50 **Aliosha Semikhatov** Nichols algebras as logarithmic CFTs

**Chair: Dražen Adamović**

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10:50 – 11:10 **Coffee break**

11:10 – 12:00 **Dragan Miličić** Kazhdan–Lusztig conjectures for Whittaker modules

12:10 – 13:00 **Sara Kitchen** Localization of Generalized Harish–Chandra Modules

**Chair: David Vogan**

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16:00 – 16:50 **Arne Meurman** Ramanujan-type formulas for  $1/\pi$

16:50 – 17:10 **Coffee break**

17:10 – 17:50 **Jinwei Yang** Zhu's algebra and a new characterization of modules for a vertex operator algebra

18:00 – 18:40 **Gordan Radobolja** Subsingular vectors in Verma modules, and tensor product of weight modules over the  $W(2,2)$  algebra

**Chair: Yi-Zhi Huang**

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### Tuesday, June 25

9:00 – 9:50 **Yi-Zhi Huang** The importance of mathematical theorems and conceptual understanding in the representation theory of vertex operator algebras

10:00 – 10:50 **Antun Milas** Beyond  $C_2$ -cofinite vertex algebras

**Chair: Alex Feingold**

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10:50 – 11:10 **Coffee break**

11:10 – 12:00 **David Vogan** TBA

12:10 – 13:00 **Pavle Pandžić** Dirac cohomology for modules without infinitesimal character

**Chair: Michel Duflo**

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16:00 – 16:50 **Martina Balagović** Degeneration of dynamical difference equations

16:50 – 17:10 **Coffee break**

17:10 – 18:00 **Ana Prlić** Dirac induction for the large discrete series of  $SU(2,1)$

18:10 – 19:00 **Nicolas Prudhon** A geometric translation principle for Dirac operators

**Chair: Jing–Song Huang**

### Wednesday, June 26

- 9:00 – 9:50 **Ivan Penkov** Generalized Harish–Chandra modules  
10:00 – 10:50 **Alexei Petukhov** The  $(\mathfrak{sp}(4), \mathfrak{sl}(2))$ -modules of finite type

**Chair: Pavle Pandžić**

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10:50 – 11:10 **Coffee break**

- 11:10 – 12:00 **Hiroshi Yamauchi**  $(2A, 3A)$ -generated subalgebras and 3-transposition subgroups on a vertex operator algebra  
12:10 – 13:00 **Dražen Adamović** On orbifold subalgebras of triplet vertex algebras

**Chair: Aliosha Semikhatov**

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16:00 – 16:50 **Ozren Perše** Some coset vertex algebras with central charge one

16:50 – 17:10 **Coffee break**

17:10 – 17:50 **Thomas Edlund** Explicit formulas for singular vectors in Verma modules

18:00 – 18:40 **Christopher Sadowski** Presentations of principal subspaces for the affine Lie algebra  $A_2^{(1)}$

**Chair: Arne Meurman**

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### Thursday, June 27

- 9:00 – 9:50 **Mirko Primc** Difference conditions in combinatorial bases of representations of affine Lie algebras  
10:00 – 10:50 **Alexander Zuevsky** Identities for modular forms generated by vertex operator superalgebras  
10:50 – 11:10 **Coffee break**  
11:10 – 11:50 **Domagoj Kovačević** Real forms of dual pairs in Lie algebras of types  $E_6, E_7, E_8$

**Chair: Hiroshi Yamauchi**