



# Symmetries in Mathematics and Physics

a conference in honour of Victor Kac

IMPA, Rio de Janeiro, Brazil  
June 24<sup>th</sup> to 28<sup>th</sup>, 2013



## CERTIFICATE

We hereby certify that, **Adriano Adrega de Moura, IMECC**, participated in the Symmetries in Mathematics and Physics II, held at IMPA – Rio de Janeiro, from June 24 to 28, 2013 and presented the following work: **Prime representations from a homological perspective.**

Rio de Janeiro, June 28, 2013.

Reimundo Heluani  
Organizing Committee

Support



An Activity of





# Symmetries in Mathematics and Physics

a conference in honour of Victor Kac

IMPA, Rio de Janeiro, Brazil  
June 24<sup>th</sup> to 28<sup>th</sup>, 2013



## CERTIFICATE

We hereby certify that, **Alexandre Ferreira Ramos, USP - Escola de Artes, Ciências e Humanidades**, participated in the Symmetries in Mathematics and Physics II, held at IMPA – Rio de Janeiro, from June 24 to 28, 2013 and presented the following work: **Symmetry and Stochastic Gene Regulation**.

Rio de Janeiro, June 28, 2013.

Reimundo Heluani  
Organizing Committee

Support



An Activity of





# Symmetries in Mathematics and Physics

a conference in honour of Victor Kac

IMPA, Rio de Janeiro, Brazil  
June 24<sup>th</sup> to 28<sup>th</sup>, 2013



## CERTIFICATE

We hereby certify that, **Alexandre Grichkov**, Instituto de Matemática e Estatística, participated in the Symmetries in Mathematics and Physics II, held at IMPA – Rio de Janeiro, from June 24 to 28, 2013 and presented the following work: **New simple Lie algebras over a field of characteristic two..**

Rio de Janeiro, June 28, 2013.

Reimundo Heluani  
Organizing Committee

Support



An Activity of





# Symmetries in Mathematics and Physics

a conference in honour of Victor Kac

IMPA, Rio de Janeiro, Brazil  
June 24<sup>th</sup> to 28<sup>th</sup>, 2013



## CERTIFICATE

We hereby certify that, **Artem Lopatin, IMECC**, participated in the Symmetries in Mathematics and Physics II, held at IMPA – Rio de Janeiro, from June 24 to 28, 2013 and presented the following work: **Classical invariant theory for linear groups in modular case..**

Rio de Janeiro, June 28, 2013.

Reimundo Heluani  
Organizing Committee

Support



An Activity of







# Symmetries in Mathematics and Physics

a conference in honour of Victor Kac

IMPA, Rio de Janeiro, Brazil  
June 24<sup>th</sup> to 28<sup>th</sup>, 2013



## CERTIFICATE

We hereby certify that, ***Evan Andrew Wilson***, Inst. de Matemática, Est. e Ciência da Computação, participated in the Symmetries in Mathematics and Physics II, held at IMPA – Rio de Janeiro, from June 24 to 28, 2013 and presented the following work: **Soliton cellular automata associated with  $D_n(1)$ -crystal  $B_2^s$** .

Rio de Janeiro, June 28, 2013.

Reimundo Heluani  
Organizing Committee

Support



An Activity of





# Symmetries in Mathematics and Physics

a conference in honour of Victor Kac

IMPA, Rio de Janeiro, Brazil  
June 24<sup>th</sup> to 28<sup>th</sup>, 2013



## CERTIFICATE

We hereby certify that, ***Fernanda de Andrade Pereira***, **IMECC**, participated in the Symmetries in Mathematics and Physics II, held at IMPA – Rio de Janeiro, from June 24 to 28, 2013 and presented the following work: **The total order on the set of equivalence classes of affinizations of  $U_q(\mathfrak{sl}_2)$ -modules..**

Rio de Janeiro, June 28, 2013.

Reimundo Heluani  
Organizing Committee

Support



An Activity of





# Symmetries in Mathematics and Physics

a conference in honour of Victor Kac

IMPA, Rio de Janeiro, Brazil  
June 24<sup>th</sup> to 28<sup>th</sup>, 2013



## CERTIFICATE

We hereby certify that, **Fernando Studzinski Carvalho**, **Universidade Federal do Paraná**, participated in the Symmetries in Mathematics and Physics II, held at IMPA – Rio de Janeiro, from June 24 to 28, 2013 and presented the following work: **Group Actions on Riemann Surfaces**.

Rio de Janeiro, June 28, 2013.

Reimundo Heluani  
Organizing Committee

Support



An Activity of





# Symmetries in Mathematics and Physics

a conference in honour of Victor Kac

IMPA, Rio de Janeiro, Brazil  
June 24<sup>th</sup> to 28<sup>th</sup>, 2013



## CERTIFICATE

We hereby certify that, **Francesco Toppan**, **Centro Brasileiro de Pesquisas Físicas**, participated in the Symmetries in Mathematics and Physics II, held at IMPA – Rio de Janeiro, from June 24 to 28, 2013 and presented the following work: **Critical scaling for D-module representations of superconformal algebras and constraints on superconformal mechanics.**

Rio de Janeiro, June 28, 2013.

Reimundo Heluani  
Organizing Committee

Support



An Activity of







# Symmetries in Mathematics and Physics

a conference in honour of Victor Kac

IMPA, Rio de Janeiro, Brazil  
June 24<sup>th</sup> to 28<sup>th</sup>, 2013



## CERTIFICATE

We hereby certify that, ***Germán Benítez Monsalve***, Instituto de Matemática e Estatística, participated in the Symmetries in Mathematics and Physics II, held at IMPA – Rio de Janeiro, from June 24 to 28, 2013 and presented the following work: **Um Estudo sobre a Categoria Derivada de Algebras String.**

Rio de Janeiro, June 28, 2013.

Reimundo Heluani  
Organizing Committee

Support



An Activity of





# Symmetries in Mathematics and Physics

a conference in honour of Victor Kac

IMPA, Rio de Janeiro, Brazil  
June 24<sup>th</sup> to 28<sup>th</sup>, 2013



## CERTIFICATE

We hereby certify that, **Iryna Kashuba**, Instituto de Matemática e Estatística, participated in the Symmetries in Mathematics and Physics II, held at IMPA – Rio de Janeiro, from June 24 to 28, 2013 and presented the following work: **Free field realizations of induced modules for affine Lie algebras.**

Rio de Janeiro, June 28, 2013.

Reimundo Heluani  
Organizing Committee

Support



An Activity of





# Symmetries in Mathematics and Physics

a conference in honour of Victor Kac

IMPA, Rio de Janeiro, Brazil  
June 24<sup>th</sup> to 28<sup>th</sup>, 2013



## CERTIFICATE

We hereby certify that, ***Ivan Kaygorodov***, **Instituto de Matemática e Estatística**, participated in the Symmetries in Mathematics and Physics II, held at IMPA – Rio de Janeiro, from June 24 to 28, 2013 and presented the following work: **Analogues of classical theorems for generalizations of Poisson algebras.**

Rio de Janeiro, June 28, 2013.

Reimundo Heluani  
Organizing Committee

Support



An Activity of





# Symmetries in Mathematics and Physics

a conference in honour of Victor Kac

IMPA, Rio de Janeiro, Brazil  
June 24<sup>th</sup> to 28<sup>th</sup>, 2013



## CERTIFICATE

We hereby certify that, **Jack Denne Arce Flores, PUC del Peru**, participated in the Symmetries in Mathematics and Physics II, held at IMPA – Rio de Janeiro, from June 24 to 28, 2013 and presented the following work:  
**Twisted tensor products with  $k[y_{\pm 1}]$  and Hopf algebras.**

Rio de Janeiro, June 28, 2013.

Reimundo Heluani  
Organizing Committee

Support



An Activity of







# Symmetries in Mathematics and Physics

a conference in honour of Victor Kac

IMPA, Rio de Janeiro, Brazil  
June 24<sup>th</sup> to 28<sup>th</sup>, 2013



## CERTIFICATE

We hereby certify that, ***Kostiantyn Iusenko***, **Universidade Federal do Abc**, participated in the Symmetries in Mathematics and Physics II, held at IMPA – Rio de Janeiro, from June 24 to 28, 2013 and presented the following work: **On the Hall algebra of representations of bound quivers over  $F_1$** .

Rio de Janeiro, June 28, 2013.

Reimundo Heluani  
Organizing Committee

Support



An Activity of





# Symmetries in Mathematics and Physics

a conference in honour of Victor Kac

IMPA, Rio de Janeiro, Brazil  
June 24<sup>th</sup> to 28<sup>th</sup>, 2013



## CERTIFICATE

We hereby certify that, **Liudmila Sabinina**, **Universidade Autônoma do Estado de Morelos**, participated in the Symmetries in Mathematics and Physics II, held at IMPA – Rio de Janeiro, from June 24 to 28, 2013 and presented the following work: **Halfautomorphisms and Code Loops**.

Rio de Janeiro, June 28, 2013.

Reimundo Heluani  
Organizing Committee

Support



An Activity of





# Symmetries in Mathematics and Physics

a conference in honour of Victor Kac

IMPA, Rio de Janeiro, Brazil  
June 24<sup>th</sup> to 28<sup>th</sup>, 2013



## CERTIFICATE

We hereby certify that, **Matheus Batagini Brito, IMECC**, participated in the Symmetries in Mathematics and Physics II, held at IMPA – Rio de Janeiro, from June 24 to 28, 2013 and presented the following work: **Snake modules of type  $B_n$  and polynomial representations of  $gl(2n|1)$ .**

Rio de Janeiro, June 28, 2013.

Reimundo Heluani  
Organizing Committee

Support



An Activity of





# Symmetries in Mathematics and Physics

a conference in honour of Victor Kac

IMPA, Rio de Janeiro, Brazil  
June 24<sup>th</sup> to 28<sup>th</sup>, 2013



## CERTIFICATE

We hereby certify that, **Matthew Lyle Bennett, IMECC**, participated in the Symmetries in Mathematics and Physics II, held at IMPA – Rio de Janeiro, from June 24 to 28, 2013 and presented the following work: **Tilting modules for the current algebra of a simple Lie algebra.**

Rio de Janeiro, June 28, 2013.

Reimundo Heluani  
Organizing Committee

Support



An Activity of







# CERTIFICATE

We hereby certify that, ***Renato Alessandro Martins***, Inst. de Matemática, Est. e Ciência da Computação, participated in the Symmetries in Mathematics and Physics II, held at IMPA – Rio de Janeiro, from June 24 to 28, 2013 and presented the following work: **Free field realizations of induced modules for affine Lie algebras.**

Rio de Janeiro, June 28, 2013.



Reimundo Heluani  
Organizing Committee



# Symmetries in Mathematics and Physics

a conference in honour of Victor Kac

IMPA, Rio de Janeiro, Brazil  
June 24<sup>th</sup> to 28<sup>th</sup>, 2013



## CERTIFICATE

We hereby certify that, **Roldão da Rocha Jr., Universidade Federal do Abc**, participated in the Symmetries in Mathematics and Physics II, held at IMPA – Rio de Janeiro, from June 24 to 28, 2013 and presented the following work: **Kac -Moody Algebras in the non-Associative Clifford Bundle on  $S^7$  and Hopf Maps.**

Rio de Janeiro, June 28, 2013.

Reimundo Heluani  
Organizing Committee

Support



An Activity of





# Symmetries in Mathematics and Physics

a conference in honour of Victor Kac

IMPA, Rio de Janeiro, Brazil  
June 24<sup>th</sup> to 28<sup>th</sup>, 2013



## CERTIFICATE

We hereby certify that, **Stephen Gagola III, Charles University, Prague**, participated in the Symmetries in Mathematics and Physics II, held at IMPA – Rio de Janeiro, from June 24 to 28, 2013 and presented the following work: **Halfautomorphisms and Code Loops**.

Rio de Janeiro, June 28, 2013.

Reimundo Heluani  
Organizing Committee

Support



An Activity of





# Symmetries in Mathematics and Physics

a conference in honour of Victor Kac

IMPA, Rio de Janeiro, Brazil  
June 24<sup>th</sup> to 28<sup>th</sup>, 2013



## CERTIFICATE

We hereby certify that, **Thais Mayumi Batista Makuta**, **Universidade Federal do Paraná**, participated in the Symmetries in Mathematics and Physics II, held at IMPA – Rio de Janeiro, from June 24 to 28, 2013 and presented the following work: **Algebras Extensions by Hopf Algebras**.

Rio de Janeiro, June 28, 2013.

Reimundo Heluani  
Organizing Committee

Support



An Activity of







# Symmetries in Mathematics and Physics

a conference in honour of Victor Kac

IMPA, Rio de Janeiro, Brazil  
June 24<sup>th</sup> to 28<sup>th</sup>, 2013



## CERTIFICATE

We hereby certify that, **Tiago Rodrigues Macedo, IMECC**, participated in the Symmetries in Mathematics and Physics II, held at IMPA – Rio de Janeiro, from June 24 to 28, 2013 and presented the following work: **Characters of representations of hyper algebras.**

Rio de Janeiro, June 28, 2013.

Reimundo Heluani  
Organizing Committee

Support



An Activity of





# Symmetries in Mathematics and Physics

a conference in honour of Victor Kac

IMPA, Rio de Janeiro, Brazil  
June 24<sup>th</sup> to 28<sup>th</sup>, 2013



## CERTIFICATE

We hereby certify that, **Victor Hugo López Solís**, Instituto de Matemática e Estatística, participated in the Symmetries in Mathematics and Physics II, held at IMPA – Rio de Janeiro, from June 24 to 28, 2013 and presented the following work: **Álgebras Envelopantes e O Teorema de Poincaré - Birkhoff - Witt..**

Rio de Janeiro, June 28, 2013.

Reimundo Heluani  
Organizing Committee

Support



An Activity of





# Symmetries in Mathematics and Physics

a conference in honour of Victor Kac

IMPA, Rio de Janeiro, Brazil  
June 24<sup>th</sup> to 28<sup>th</sup>, 2013



## CERTIFICATE

We hereby certify that, **Zhanna Kuznetsova**, **Universidade Federal do Abc**, participated in the Symmetries in Mathematics and Physics II, held at IMPA – Rio de Janeiro, from June 24 to 28, 2013 and presented the following work: **N-extended supersymmetric and superconformal systems in one dimension..**

Rio de Janeiro, June 28, 2013.

Reimundo Heluani  
Organizing Committee

Support



An Activity of

