

# Detailed programme

## Saturday 16 July

16:00 - 21:00 Arrivals

## Sunday 17 July

07:30 - 08:30 Breakfast

08:45 - 12:30 Registration

12:45 - 13:45 Lunch

16:00 - 17:10 Arrivals / Registration

### Amphitheatre D. Vikelas

17:15 - 17:45 Welcomes

17:45 - 18:15 Dionyssis Gangas

*The International Olympic Academy and the dissemination of the Olympic values*

18:15 - 18:45 Sofia Lambropoulou

*Homage to Christos Papakyriakopoulos*

18:50 - 19:35 **Link invariants:** Vaughan F.R. Jones

*Knots and links from the Thompson groups*

19:40 - 21:00 Welcome Reception

## Monday 18 July

07:30 - 08:30 Breakfast

### Plenary talks: Amphitheatre D. Vikelas

- 08:45 - 09:30 **Virtual Knot Theory:** Louis H. Kauffman  
*Invariants in Virtual Knot Theory*
- 09:45 - 10:30 **Geometry of knots and manifolds:** Colin Adams  
*Multi-crossing number of knots and relations with other invariants*

10:30 - 11:00 Coffee break

### Session 1: Amphitheatre D. Vikelas

- 11:00 - 11:40 **Geometry of knots and manifolds:** Joshua Howie  
*A characterisation of alternating knot exteriors*
- 11:55 - 12:35 **Geometry of knots and manifolds:** Effie Kalfagianni  
*Geometric estimates from knot spanning surfaces*
- 12:45 - 13:45 Lunch
- 16:00 - 16:20 **Geometry of knots and manifolds:** Nikolay Abrosimov  
*Volumes of polyhedra related with links and knots*
- 16:25 - 16:45 **Geometry of knots and manifolds:** Evgeny Fominykh  
*Complexity of virtual 3-manifolds*
- 16:50 - 17:10 **Geometry of knots and manifolds:** Stefanos Gialamas  
*Determining Vanishing Massey Triple Products in the Complement of a Link with more than two components*
- 17:15 - 17:35 **Geometry of knots and manifolds:** Catherine Gille  
*Klein branched covers of spatial trivalent graphs and surgery*
- 17:35 - 18:00 Coffee break
- 18:00 - 18:20 **Geometry of knots and manifolds:** Delphine Moussard  
*Finite type invariants of rational homology 3-spheres*
- 18:25 - 18:45 **Geometry of knots and manifolds:** Tom Needham  
*The Geometry of the Shape Space of Framed Loops*
- 18:50 - 19:10 **Geometry of knots and manifolds:** Joao M. Nogueira  
*Knot complement with all possible meridional essential surfaces*

### Session 2: Conference Hall Otto Szymiczek

- 11:00 - 11:40 **Invariants of knots in 3-manifolds / Skein modules:** Thang Le  
*Triangular decomposition of skein algebras and quantum Teichmuller spaces*
- 11:55 - 12:35 **Invariants of knots in 3-manifolds / Skein modules:** Uwe Kaiser  
*Skein theory of links in hyperbolic 3-manifolds*
- 12:45 - 13:45 Lunch
- 16:00 - 16:40 **Invariants of knots in 3-manifolds / Skein modules:** Hugh Morton  
*A skein theoretic model for the double affine Hecke algebras*
- 16:50 - 17:10 **Invariants of knots in 3-manifolds / Skein modules:** Ioannis Diamantis  
*On the Homflypt skein module of the lens spaces  $L(p, 1)$  via braids*
- 17:15 - 17:35 **Invariants of knots in 3-manifolds / Skein modules:** Boštjan Gabrovšek  
*Knots in Seifert Fibered Spaces*

- 17:35 - 18:00 Coffee break
- 18:00 - 18:20 **Invariants of knots in 3-manifolds / Skein modules:** Enrico Manfredi  
*Diffeomorphic vs isotopic knots in lens spaces*
- 18:25 - 18:45 **Invariants of knots in 3-manifolds / Skein modules:** Alessia Cattabriga  
*Representations and invariants of links in lens spaces*

### Session 3: Conference Room C. Diem

- 11:00 - 11:40 **Braids:** Jinseok Cho  
*Cluster algebra on the braids*
- 11:55 - 12:35 **Braids:** Mauro Spera  
*Geometry of unitary Riemann surface braid group representations and Laughlin-type wave functions*
- 12:45 - 13:45 Lunch
- 16:00 - 16:40 **Braids:** Vladimir Vershinin  
*Brunnian and Cohen braids and Lie algebras*
- 16:50 - 17:10 **Braids:** Usman Ali  
*On the Gröbner-Shirshov basis of 3-braids*
- 17:15 - 17:35 **Braids:** Zaffar Iqbal  
*Hilbert series of right-angled affine Artin monoids  $M(\tilde{A}_n^\infty)$*
- 17:35 - 18:00 Coffee break
- 18:00 - 18:20 **Braids:** Joseph Ricci  
*Congruence subgroups and low-dimensional representations of the braid group  $B_3$*
- 19:15 - 20:00 Poster session
- 20:00 - 21:00 Dinner

## Tuesday 19 July

07:30 - 08:30 Breakfast

### Plenary talks: Amphitheatre D. Vikelas

- 08:45 - 09:30 **Geometry of knots and manifolds:** Cameron Gordon  
*Left-orderability and cyclic branched covers of knots*
- 09:45 - 10:30 **Khovanov homology and categorification:** Radmila Sazdanovic  
*Khovanov homology: an introduction*

10:30 - 11:00 Coffee break

- 11:00 - 11:40 **Knot algebras / Link invariants:** Sofia Lambropoulou  
*A new skein invariant for classical links from the Yokonuma–Hecke algebras*

### Session 1: Amphitheatre D. Vikelas

- 11:55 - 12:35 **4-dimensional topology:** Anthony Bosman  
*Shake Slice and Shake Concordant Links*
- 12:45 - 13:45 Lunch
- 16:00 - 16:40 **4-dimensional topology:** Samuel J. Lomonaco  
*The Geometry of the Fox Free Calculus with Applications to Higher Dimensional Knot Theory*
- 16:50 - 17:10 **4-dimensional topology:** Celeste Damiani  
*Alexander invariants for ribbon tangles*
- 17:15 - 17:35 **Geometry of knots and manifolds:** Shawn Rafalski  
*Volume bounds for certain hyperbolic 3-orbifolds*
- 17:35 - 18:00 Coffee break
- 18:00 - 18:20 **Geometry of knots and manifolds:** António Salgueiro  
*Actions of 3-manifolds with the same quotient*
- 18:25 - 18:45 **Geometry of knots and manifolds:** Anastasiia Tsvietkova  
*The number of surfaces of fixed genus in an alternating link complement*
- 18:50 - 19:10 **Geometry of knots and manifolds:** Christine Ruey Shan Lee  
*The colored Jones polynomial and slopes of pretzel knots*
- 19:15 - 19:35 **Geometry of knots and manifolds:** Byunghee An  
*Chekhanov–Eliashberg DGAs for singular Legendrian knots*

### Session 2: Conference Hall Otto Szymiczek

- 11:55 - 12:35 **Knot algebras / Link invariants:** Mikami Hirasawa  
*Interlacing zeros of Alexander polynomials of links*
- 12:45 - 13:45 Lunch
- 16:00 - 16:20 **Knot algebras / Link invariants:** Dimos Goundaroulis  
*A new 2-variable generalization of the Jones polynomial*
- 16:25 - 16:45 **Knot algebras / Link invariants:** Fathi Ben Aribi  
*Detecting knots with the  $L^2$ -Alexander invariant*
- 16:50 - 17:10 **Knot algebras / Link invariants:** Nafaa Chbili  
*Polynomial invariants of Quasi-Alternating links*

- 17:15 - 17:35 **Knot algebras / Link invariants:** Zhiqing Yang  
*Multi-skein equation knot invariant*
- 17:35 - 18:00 Coffee break
- 18:00 - 18:20 **Virtual Knot Theory:** Neslihan Gügümcü  
*How to estimate the height of a knotoid*
- 18:25 - 18:45 **Knot algebras / Link invariants:** Hwa Jeong Lee  
*On the arc index of Kanenobu knots*
- 18:50 - 19:10 **Knot algebras / Link invariants:** John Bryden  
*Abelian quantum knot Invariants*
- 19:15 - 19:35 **Knot algebras / Link invariants:** Alexander Stoimenow  
*On coefficients and roots of the Alexander-Conway polynomial*

### Session 3: Conference Room C. Diem

- 11:55 - 12:35 **Khovanov homology and categorification:** Alexander Shumakovitch  
*Knot invariants arising from homological operations on Khovanov homology*
- 12:45 - 13:45 Lunch
- 16:00 - 16:20 **Khovanov homology and categorification:** Dan Scofield  
*Torsion in Khovanov link homology via chromatic graph cohomology*
- 16:25 - 16:45 **Khovanov homology and categorification:** Marithania Silvero  
*Studying torsion of extreme Khovanov homology*
- 16:50 - 17:10 **Khovanov homology and categorification:** Hoel Queffelec  
*HOMFLY-PT and Alexander polynomials from a doubled Schur algebra*
- 17:15 - 17:35 **Khovanov homology and categorification:** Abdul Rauf Nizami  
*Khovanov Homology of the Braid Link  $x_1x_2x_1\cdots$*
- 17:35 - 18:00 Coffee break
- 18:00 - 18:20 **Braids:** Matthieu Calvez  
*Towards an algebraic Nielsen-Thurston classification of braids*
- 18:25 - 19:05 **Topological spaces:** Ruth Lawrence  
*Explicit DGLA models of simple chain complexes and their properties*
- 19:30 - 20:00 Poster session
- 20:00 - 21:00 Dinner

## Wednesday 20 July

07:30 - 08:30 Breakfast

### Plenary talks: Amphitheatre D. Vikelas

08:45 - 09:30 **Knot algebras / Link invariants:** Dror Bar-Natan

*The brute and the hidden paradise*

09:45 - 10:30 **Knots in Nature - Physical Sciences:** Kenneth C. Millett

*Random sampling spaces of thick polygons*

10:30 - 11:00 Coffee break

### Session 1: Amphitheatre D. Vikelas

11:00 - 11:40 **Khovanov homology and categorification:** Anna Beliakova

*Quantum Link Homology via Trace Functor*

11:55 - 12:35 **Khovanov homology and categorification:** Paul Wedrich

*Some differentials on colored Khovanov-Rozansky link homology*

### Session 2: Conference Hall Otto Szymiczek

11:00 - 11:40 **Virtual Knot Theory:** Valeriy Bardakov

*Some representations of virtual braid group*

11:55 - 12:35 **Virtual Knot Theory:** Paolo Bellingeri

*Local moves for welded knotted objects*

12:45 - 13:45 Lunch

14:00 - 20:00 Excursion: sightseeing at the Kaiafas lake and thermal springs & swimming at the beach of Zaharo

20:00 - 21:00 Dinner

## Thursday 21 July

07:30 - 08:30 Breakfast

### Plenary talks: Amphitheatre D. Vikelas

- 08:45 - 09:30 **TQFTs and the volume conjecture:** Stavros Garoufalidis  
*Nahm sums, the Bloch group and quantum topology*
- 09:45 - 10:30 **Distributive structures and Yang-Baxter homology:** Jozef H. Przytycki  
*Knot Theory: from Fox 3-colorings of links to Yang-Baxter homology*

10:30 - 11:00 Coffee break

### Session 1: Amphitheatre D. Vikelas

- 11:00 - 11:40 **Knots in Nature - Physical Sciences:** Renzo L. Ricca  
*Knots cascade detected by a monotonically decreasing sequence of HOMFLYPT values*
- 11:55 - 12:35 **Knots in Nature - Physical Sciences:** Mark Dennis  
*Knotted Vortices in Light*
- 12:45 - 13:45 Lunch
- 15:00 - 15:20 **Knots in Nature - Physical Sciences:** Benjamin Bode  
*Knotted fields and real algebraic links*
- 15:25 - 15:45 **Knots in Nature - Physical Sciences:** David Foster  
*Knotted Resonances*
- 15:50 - 16:30 **Knots in Nature - Physical Sciences:** Rafal Komendarczyk  
*Ropelength, crossing number and finite-type invariants*
- 16:35 - 17:00 Coffee break
- 17:00 - 17:20 **Knots in Nature - Physical Sciences:** Stathis Antoniou  
*The dynamics of topological surgery*
- 17:25 - 17:45 **Knots in Nature - Physical Sciences:** Xin Liu  
*On the derivation of HOMFLYPT as a new invariant of topological fluid mechanics*
- 17:50 - 18:10 **Knots in Nature - Physical Sciences:** Ljubica S. Velimirovic  
*Infinitesimal bending of knots*
- 18:15 - 18:35 **Invariants of knots in 3-manifolds / Skein modules:** Dimitrios Kodokostas  
*Algebras of Hecke type on the mixed braid group with two fixed strands*

### Session 2: Conference Hall Otto Szymczek

- 11:00 - 11:40 **Distributive structures and Yang-Baxter homology:** Masahico Saito  
*Topological quandles and cocycle knot invariants*
- 11:55 - 12:35 **Distributive structures and Yang-Baxter homology:** Takefumi Nosaka  
*Twisted cohomology pairings of knots*
- 12:45 - 13:45 Lunch
- 15:00 - 15:20 **Distributive structures and Yang-Baxter homology:** Jim Hoste  
*Knots with finite  $n$ -quandles*
- 15:25 - 15:45 **Distributive structures and Yang-Baxter homology:** Seung Yeop Yang  
*Annihilation of rack and quandle homology groups of finite quandles*
- 15:50 - 16:10 **Distributive structures and Yang-Baxter homology:** Witold Rosicki  
*Cocycle invariants of codimension 2 embeddings of manifolds*

- 16:15 - 16:35 **Distributive structures and Yang-Baxter homology:** Xiao Wang  
*Equivalence of two definitions of set-theoretic Yang-Baxter homology*
- 16:35 - 17:00 Coffee break
- 17:00 - 17:20 **Distributive structures and Yang-Baxter homology:** Sam Nelson  
*Biquandle Brackets*
- 17:25 - 17:45 **Distributive structures and Yang-Baxter homology:** Seonmi Choi  
*On quandle homology groups of finite quandles*
- 17:50 - 18:10 **Distributive structures and Yang-Baxter homology:** Sujoy Mukherjee  
*The role of associativity in the homology of self-distributive algebraic structures*
- 18:15 - 18:35 **Distributive structures and Yang-Baxter homology:** Byeorhi Kim  
*On decomposition of finite quandles*

### Session 3: Conference Room C. Diem

- 11:00 - 11:40 **TQFTs and the volume conjecture:** Christian Blanchet  
*Modified trace on quantum  $sl(2)$  and logarithmic invariants*
- 11:55 - 12:35 **Khovanov homology and categorification:** Piotr Sulkowski  
*Knot invariants and BPS states*
- 12:45 - 13:45 Lunch
- 15:00 - 15:40 **TQFTs and the volume conjecture:** Hitoshi Murakami  
*Colored Jones polynomial and  $SL(2;C)$  representations of a knot group*
- 15:50 - 16:10 **TQFTs and the volume conjecture:** Tian Yang  
*Volume Conjectures for Reshetikhin-Turaev and Turaev-Viro invariants*
- 16:15 - 16:35 **TQFTs and the volume conjecture:** Renaud Detcherry  
*Curve operators in TQFT as Toeplitz operators*
- 16:35 - 17:00 Coffee break
- 17:00 - 17:20 **TQFTs and the volume conjecture:** Wade Bloomquist  
*Asymptotic Faithfulness of Quantum  $SU(3)$  Representations*
- 17:25 - 17:45 **Knots in Nature - Life Sciences:** Pawel Dabrowski-Tumanski  
*Topology of proteins with complex lasso structure*
- 17:50 - 18:10 **Knots in Nature - Life Sciences:** Candice Price  
*A Discussion on the Tangle Model: An Application of Topology*
- 18:15 - 18:35 **Knots in Nature - Life Sciences:** Alexander Taylor  
*Virtual knotting expressed in proteins*
- 20:00 - 21:00 Conference Dinner
- 21:00 - 23:00 Greek dances - Music & Party

## Friday 22 July

07:30 - 08:30 Breakfast

### Plenary talks: Amphitheatre D. Vikelas

- 08:45 - 09:30 **Knots in Nature - Life Sciences:** Neil Osheroff  
*Recognition of DNA Topology by Topoisomerases*
- 09:45 - 10:30 **Knots in Nature - Physical Sciences:** Dmitry Sokoloff  
*Classical helicity and higher helicity invariants in astrophysical dynamos*

10:30 - 11:00 Coffee break

### Session 1: Amphitheatre D. Vikelas

- 11:00 - 11:40 **Knots in Nature - Life Sciences:** Lynn Zechiedrich  
*Effect of DNA Supercoiling on DNA Dynamics*
- 11:55 - 12:35 **Knots in Nature - Life Sciences:** Joanna Sulkowska  
*Entanglement in proteins: knots, slipknots and lassos*

### Session 2: Conference Hall Otto Szymiczek

- 11:00 - 11:40 **Knots in Nature - Physical Sciences:** Philipp Reiter  
*Elastic knots*
- 11:55 - 12:35 **Topological spaces:** Andrey Mikhovich  
*Schematization, QR-presentations and Conjuring(s)*

12:45 - 13:45 Farewell Lunch

20:00 - 21:00 Dinner

## Saturday 23 July

07:00 - 12:00 Departures