DISC 2016
The 30th International Symposium on Distributed Computing

DISC is held in cooperation with:

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Achour Mostefaoui  
University of Nantes, France
Program at a Glance

Monday, September 26
9:00 – 18:00  Workshops ADGA and MAC
   At 1st floor of Tower 26 (rooms 25-26/105 for ADGA, 26-00/101 for MAC)
18:30  DISC Welcome Reception  (UPMC, Zamanski Tower, 24th floor)

Tuesday, September 27
Held in Esclangon building, Amphi Durand in University Pierre & Marie Curie (Jussieu Campus).
8:50 – 9:00  Opening of DISC
9:00 – 10:00  Invited lecture: J. Esperza
10:00 – 10:30  Coffee break
10:30 – 12:10  Session 1
12:15 – 14:00  Lunch break  (Restaurant at Jussieu level, Tower 26)
14:00 – 15:40  Session 2
15:40 – 16:10  Coffee break
16:10 – 17:50  Session 3
18:00 – 19:00  Business meeting

Wednesday, September 28
Held in Esclangon building, Amphi Durand in University Pierre & Marie Curie (Jussieu Campus).
9:00 – 10:00  Invited lecture: S. Abiteboul
10:00 – 10:30  Coffee break
10:30 – 12:10  Session 4
12:15 – 14:00  Lunch break  (Restaurant at Jussieu level, Tower 26)
14:00 – 15:40  Session 5
15:40 – 16:10  Coffee break
16:10 – 17:50  Session 6: Best Student Paper session
19:00 – 23:00  Social event (banquet on boat)

Thursday, September 29
Held in Esclangon building, Amphi Durand in University Pierre & Marie Curie (Jussieu Campus).
9:00 – 10:00  Invited lecture: G. Cormode
10:00 – 10:30  Coffee break
10:30 – 12:10  Session 7
12:15 – 14:00  Lunch break  (Restaurant at Jussieu level, Tower 26)
14:00 – 15:40  Session 8
15:40 – 16:10  Coffee break
16:10 – 18:00  Session 9
18:00 – 18:15  Closing of DISC

Friday, September 30
8:30 – 16:00  Workshop DGDC
   At 1st floor of Tower 26 (room 25-26/105)
### Detailed Program

**Monday, September 26**

#### 5<sup>th</sup> Workshop on Advances in Distributed Graph Algorithms (ADGA)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker/Topic</th>
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<tbody>
<tr>
<td>9:30 – 12:00</td>
<td><strong>Session 1</strong></td>
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<tr>
<td>9:30 – 11:00</td>
<td><em>Recent Algorithms and Lower Bounds for Global Distributed Graph Problems</em></td>
<td>Stephan Holzer</td>
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<td>11:00 – 12:00</td>
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<td><em>Parallel Graph Algorithms</em></td>
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<td>12:00 – 13:30</td>
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<td><strong>Lunch break</strong></td>
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<td>13:30 – 14:30</td>
<td><strong>Session 2</strong></td>
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<td>13:30 – 14:30</td>
<td><em>Communication Complexity for Distributed Graphs</em></td>
<td>Qin Zhang</td>
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<tr>
<td>14:30 – 15:30</td>
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<td><em>A journey through compact routing</em></td>
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<td>15:30 – 16:00</td>
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<td><strong>Coffee break</strong></td>
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<tr>
<td>16:00 – 18:00</td>
<td><strong>Session 3</strong></td>
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<td>16:00 – 17:00</td>
<td><em>Robust and Efficient Computation in Dynamic Networks with Heavy Churn</em></td>
<td>John Augustine</td>
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<td>17:00 – 18:00</td>
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<td><em>Distributed Symmetry-Breaking in Static and Dynamic Networks</em></td>
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<td>18:00</td>
<td><strong>Workshop ends</strong></td>
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#### 6<sup>th</sup> Workshop on Moving and Computing (MAC)

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<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>9:00 – 10:30</td>
<td><strong>Session 1</strong></td>
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<tr>
<td>9:00 – 9:30</td>
<td><em>Symmetry of mobile robots in 3D space</em></td>
<td>Yukiko Yamauchi</td>
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<td>9:30 – 10:00</td>
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<td><em>Fast Complete Visibility for Point Robots with Lights</em></td>
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<td>10:00 – 10:30</td>
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<td>Shlomi Dolev</td>
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<td>10:30 – 11:00</td>
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<td><strong>Coffee break</strong></td>
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<td>Time</td>
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<tr>
<td>11:00 – 12:30</td>
<td><strong>Session 2</strong></td>
<td>Programmable matter: An application of distributed moving robots</td>
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<td>11:00 – 11:30</td>
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<td>11:30 – 12:00</td>
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<td>Partial gathering and uniform deployment of mobile agents in ring networks</td>
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<td>12:00 – 12:30</td>
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<td>Toward Time-Optimal Gathering for Mobile Robots with Limited Visibility</td>
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<td>12:30 – 14:00</td>
<td>Lunch break</td>
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<td>14:00 – 15:30</td>
<td><strong>Session 3</strong></td>
<td>Live Exploration of Dynamic Rings by mobile agents</td>
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<td>14:00 – 14:30</td>
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<td>14:30 – 15:00</td>
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<td>Gathering of Robots in a Ring with Mobile Faults: From theory to practice</td>
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<td>15:00 – 15:30</td>
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<td>From Additive Combinatorics to Distributed Load Balancing and Network Patrolling</td>
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<td>15:30 – 16:00</td>
<td>Coffee break</td>
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<td>16:00 – 17:30</td>
<td><strong>Session 4</strong></td>
<td>Parallel Linear Search without Coordination</td>
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<td>16:00 – 16:30</td>
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<td>16:30 – 17:00</td>
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<td>Spy-Game on graphs</td>
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<td>17:00 – 17:30</td>
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<td>On mobile agents verifiable problems</td>
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<td>17:30 – 18:30</td>
<td><strong>Session 5: Short Talks and Open Problems</strong></td>
<td>A general framework for automatic synthesis of distributed algorithms for network of robots</td>
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<td>17:30 – 17:50</td>
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<td>17:50 – 18:10</td>
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<td>Localization with Limited Visibility</td>
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<td>18:10 – 18:30</td>
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<td>Searching a Dark Cave Online by Optimal Number of Searchers</td>
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<td>18:10 – 18:30</td>
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<td>Forming patterns with multiplicity points without multiplicity detection</td>
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<td>18:10 – 18:30</td>
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<tr>
<td>18:30</td>
<td>DISC Welcome Reception</td>
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<td></td>
<td>At 24th floor of Zamanski Tower, UPMC</td>
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## Tuesday, September 27

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<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tr>
<td>8:50 – 9:00</td>
<td><strong>Opening of DISC</strong></td>
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| 9:00 – 10:00 | Keynote talk by Javier Esperza  
*Verification of Population Protocols* |
| 10:00 – 10:30 | **Coffee break**                                                     |

### Session 1: 10:30 – 12:10 (Shared Memory)

**Session Chair:** Panagiota Fatourou

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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| 10:30 – 10:55 | *k-Abortable Objects: Progress under High Contention*  
Naama Ben-David, David Yu Cheng Chan, Vassos Hadzilacos and Sam Toueg  |
| 10:55 – 11:20 | *Linearizability of Persistent Memory Objects under a Full-System-Crash Failure Model*  
Joseph Izraelevitz, Hammurabi Mendes and Michael L. Scott  |
| 11:20 – 11:45 | *On Composition and Implementation of Sequential Consistency*  
Matthieu Perrin, Matoula Petrolia, Achour Mostéfaoui and Claude Jard  |
| 11:45 – 12:10 | *Upper Bounds for Boundless Tagging with Bounded Objects*  
Zahra Aghazadeh and Philipp Woelfel  |
| 12:15 – 14:00 | **Lunch break**                                                      |

### Session 2: 14:00 – 15:40 (Distributed Graph Algorithm)

**Session Chair:** Christoph Lenzen

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<th>Time</th>
<th>Event</th>
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| 14:00 – 14:25 | *Fast Distributed Algorithms for Testing Graph Properties*  
Keren Censor-Hillel, Eldar Fischer, Gregory Schwartzman and Yadu Vasudev  |
| 14:25 – 14:50 | *Distributed Testing of Excluded Subgraphs*  
Pierre Fraigniaud, Ivan Rapaport, Ville Salo and Ioan Todinca  |
| 14:50 – 15:15 | *Deterministic Leader Election in $O(D + \log n)$ Time with Messages of Size $O(1)$*  
Arnaud Casteigts, Yves Métivier, John Michael Robson and Akka Zemmari  |
| 15:15 – 15:40 | *Further Algebraic Algorithms in the Congested Clique Model and Applications to Graph-Theoretic Problems*  
François Le Gall  |
| 15:40 – 16:10 | **Coffee break**                                                      |

### Session 3: 16:10 – 17:49 (Information Spreading)

**Session Chair:** Swan Dubois

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<th>Time</th>
<th>Event</th>
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| 16:10 – 16:35 | *Fast Two-Robot Disk Evacuation with Wireless Communication*  
Ioannis Lamprou, Russell Martin and Sven Schewe  |
| 16:35 – 17:00 | *Buffer Size for Routing Limited-Rate Adversarial Traffic*  
Avery Miller and Boaz Patt-Shamir  |
| 17:00 – 17:25 | *Information Spreading in Dynamic Networks under Oblivious Adversaries*  
John Augustine, Chen Avin, Mehraneh Liaee, Gopal Pandurangan and Rajmohan Rajaraman  |
| 17:25 – 17:33 | *Brief Announcement: Mending the Big-Data Missing Information*  
Hadassa Daltrophe, Shlomi Dolev and Zvi Lotker  |
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<th>Time</th>
<th>Event</th>
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Orr Fischer, Rotem Oshman and Uri Zwick |
| 17:41 – 17:49 | Brief Announcement: Beeping a Maximal Independent Set Fast                                         
Stephan Holzer and Nancy Lynch |
| 18:00 – 19:00 | Business meeting                                                                           |

**Wednesday, September 28**

9:00 – 10:00 Keynote talk by Serge Abiteboul  
*Personal Information Management Systems and Knowledge Integration*

10:00 – 10:30 Coffee break

**Session 4: 10:30 – 12:10 (Asynchrony)**

Session Chair: Panagiota Fatourou

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<tr>
<th>Time</th>
<th>Event</th>
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| 10:30 – 10:55 | Anonymity-Preserving Failure Detectors                               
Zohir Bouzid and Corentin Travers |
| 10:55 – 11:20 | Asynchronous Computability Theorems for t-Resilient Systems          
Vikram Saraph, Maurice Herlihy and Eli Gafni |
| 11:20 – 11:45 | Priority Mutual Exclusion: Specification and Algorithm               
Chien-Chung Huang and Prasad Jayanti |
| 11:45 – 12:10 | Opacity vs TMS2: Expectations and Reality                              
Sandeep Hans, Ahmed Hassan, Roberto Palmieri, Sebastiano Peluso and Binoy Ravindran |

12:15 – 14:00 Lunch break

**Session 5: 14:00 – 15:39 (Local Model)**

Session Chair: Cyril Gavoille

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<tr>
<th>Time</th>
<th>Event</th>
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| 14:00 – 14:25 | Polynomial Lower Bound for Distributed Graph Coloring in a Weak LOCAL Model (Best Paper Award) 
Dan Hefetz, Fabian Kuhn, Yannic Maus and Angelika Steger |
| 14:25 – 14:50 | Near-Optimal Low-Congestion Shortcuts on Bounded Parameter Graphs     
Bernhard Haeupler, Taisuke Izumi and Goran Zuzic |
| 14:50 – 15:15 | Distributed Construction of Purely Additive Spanners                  
Keren Censor-Hillel, Telikepalli Kavitha, Ami Paz and Amir Yehudayoff |
| 15:15 – 15:23 | Brief Announcement: A Log*-Time Local MDS Approximation Scheme for Bounded Genus Graphs 
Saeed Akhoondian Amiri and Stefan Schmid |
| 15:23 – 15:31 | Brief Announcement: Local Distributed Verification                   
Alkida Balliu, Gianlorenzo D’Angelo, Pierre Fraigniaud and Dennis Olivetti |
| 15:31 – 15:39 | Brief Announcement: Deterministic MST Sparsification in the Congested Clique  
Janne H. Korhonen |
| 15:40 – 16:10 | Coffee break                                                          |
Session 6: 16:10 – 17:50 (Best Student Paper Election)
Session Chair: Cyril Gavoille
16:10 – 16:35  Non-Bayesian Learning in the Presence of Byzantine Agents
Lili Su and Nitin H. Vaidya
16:35 – 17:00  Near-Linear Lower Bounds for Distributed Distance Computations, Even in Sparse Networks
Amir Abboud, Keren Censor-Hillel and Seri Khoury
17:00 – 17:25  Lower Bound on the Step Complexity of Anonymous Binary Consensus
Hagit Attiya, Ohad Ben-Baruch and Danny Hendler
17:25 – 17:50  Best student paper election

Social Event
19:00 – 23:00  Conference Banquet on boat

Thursday, September 29

9:00 – 10:00  Keynote talk by Graham Cormode
Matching and Covering in Streaming Graphs
10:00 – 10:30  Coffee break

Session 7: 10:30 – 12:10 (Distributed Data-Structures and Algorithms)
Session Chair: Philipp Woelfel
10:30 – 10:55  Optimal Consistent Network Updates in Polynomial Time
Pavol Cerny, Nate Foster, Nilesh Jagnik and Jedidiah McClurg
10:55 – 11:20  Depth of a Random Binary Search Tree with Concurrent Insertions
James Aspnes and Eric Ruppert
11:20 – 11:45  Sublinear-Space Distance Labeling using Hubs
Pawel Gawrychowski, Adrian Kosowski and Przemyslaw Uznanski
11:45 – 12:10  Online Balanced Repartitioning
Chen Avin, Andreas Loukas, Maciej Pacut and Stefan Schmid
12:15 – 14:00  Lunch break

Session 8: 14:00 – 15:40 (Distributed Models and Computation)
Session Chair: Emmanuel Godard
14:00 – 14:25  Are Byzantine Failures Really Different from Crash Failures?
Damien Imbs, Michel Raynal and Julien Stainer
14:25 – 14:50  Optimal Fair Computation
Rachid Guerraoui and Jingjing Wang
14:50 – 15:15  Towards a Universal Approach for Monotonic Searchability in Self-Stabilizing Overlay Networks
Christian Scheideler, Alexander Setzer and Thim Strothmann
15:15 – 15:40  Non-Local Probes Do Not Help with Many Graph Problems
Mika Göös, Juho Hirvonen, Reut Levi, Moti Medina and Jukka Suomela
15:40 – 16:10  Coffee break
Session 9: 16:10 – 17:57 (Robots and Shared Memory)

Session Chair: David Ilcinkas

16:10 – 16:35 How to Discreetly Spread a Rumor in a Crowd
Mohsen Ghaffari and Calvin Newport

16:35 – 17:00 Certified Universal Gathering in \( \mathbb{R}^2 \) for Oblivious Mobile Robots
Pierre Courtieu, Lionel Rieg, Sèbastien Tixeuil and Xavier Urbain

17:00 – 17:25 Asynchronous Embedded Pattern Formation without Orientation
Serafino Cicerone, Gabriele Di Stefano and Alfredo Navarra

17:25 – 17:33 Brief Announcement: Symmetricity in 3D-space – Characterizing Formable Patterns by Synchronous Mobile Robots
Yukiko Yamauchi, Taichi Uehara and Masafumi Yamashita

17:33 – 17:41 Brief Announcement: Set-Consensus Collections are Decidable
Carole Delporte-Gallet, Hugues Fauconnier, Eli Gafni and Petr Kuznetsov

Claire Capdevielle, Colette Johnen and Alessia Milani

Tian Ze Chen and Yuanhao Wei

18:00 – 18:15 Closing of DISC

Friday, September 30

1st Workshop on Dynamic Graphs in Distributed Computing (DGDC)

8:30 – 10:00 Session 1

8:30 – 9:15 A Set Theoretic Approach to Dynamic Graphs
Arnaud Casteigts

9:15 – 10:00 Expressivity of TVGs: Why Dynamic Graphs should be modelled with TAs
Emmanuel Godard

10:00 – 10:15 Coffee break

10:15 – 12:30 Session 2

10:15 – 11:00 An Overview of Recent Progress in Temporal Graphs: An Algorithmic Perspective
Othon Michail

11:00 – 11:45 On temporally connected graphs and the issue of label redundancy
Eleni Akrida

11:45 – 12:30 How to Explore a Fast Changing World
Zvi Lotker

12:30 – 13:45 Lunch break
<table>
<thead>
<tr>
<th>Time</th>
<th>Session 3</th>
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<tbody>
<tr>
<td>13:45 – 14:00</td>
<td>Broadcasting in Dynamic Radio Networks</td>
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<td>Mohamad Ahmadi</td>
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<tr>
<td>14:00 – 14:30</td>
<td>Cost of Anonymity in Dynamic Networks</td>
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<td>Guiseppe Di Luna</td>
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<tr>
<td>14:30 – 15:15</td>
<td>Reaching Agreement in a Dynamic Distributed System</td>
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<td>Peter Robinson</td>
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<td>16:00</td>
<td>Workshop ends</td>
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The **DISC conference** will be held at Université Pierre & Marie Curie at Amphi Durand in the building Esclangon, Campus de Jussieu, 4 place Jussieu, 75005 Paris.

The workshops will be held at Université Pierre & Marie Curie at 1st floor of Tower 26, Campus de Jussieu, 4 place Jussieu, 75005 Paris:

- **Workshop ADGA** (26th September) is located in room 25-26/105 (that is, first floor from Tower 26, corridor 26-25, room 105),
- **Workshop MAC** (26th September) is located in room 26-00/101 (that is, first floor from Tower 26, corridor 26-00, room 101),
- **Workshop DGDC** (30th September) is located in room 25-26/105 (that is, first floor from Tower 26, corridor 26-25, room 105).

The **DISC Welcome Reception** will be held at Université Pierre & Marie Curie at 24th floor of the Zamansky Tower, Campus de Jussieu, 4 place Jussieu, 75005 Paris.