## BMS/SFB Summer School 2013. Discrete Differential Geometry

## First week

All lectures take place in **Room MA 041** (follow the signs), Institute of Mathematics, TU Berlin, Strasse des 17. Juni 136, 10623 Berlin **Registration** starts Monday 8:30.

|               | Monday 09  | Tuesday 10   | Wednesday 11  | Thursday 12   | Friday 13   |
|---------------|--|--|---|---|---|
| 9:30 — 11:00  | Pentagram map, the first 21 years  | Pentagram map, the first 21 years  | Introduction to<br>Yang-Baxter<br>equation and<br>statistical mechanics                       | Introduction to<br>Yang-Baxter<br>equation and<br>statistical mechanics             | An introduction to<br>Teichmüller theory<br>from the triangulation<br>point of view |
|               | Serge Tabachnikov  | Serge Tabachnikov  | Vladimir Bazhanov   | Vladimir Bazhanov   | Feng Luo  |
| 11:00 – 11:30 | coffee break   | coffee break   | coffee break  | coffee break  | coffee break  |
| 11:30 – 13:00 | A unified approach to<br>smooth and discrete<br>curvatures using<br>Cartan's moving<br>frames<br>Max Wardetzky | A unified approach to<br>smooth and discrete<br>curvatures using<br>Cartan's moving<br>frames<br>Max Wardetzky | Applied Harmonic<br>Analysis meets<br>Geometry<br>Gitta Kutyniok                              | Applied Harmonic<br>Analysis meets<br>Geometry<br>Gitta Kutyniok                    | Applied Harmonic<br>Analysis meets<br>Geometry<br>Gitta Kutyniok                    |
| 13:00 – 14:30 | lunch break  | lunch break  | lunch break   | lunch break   | lunch break   |
| 14:30 – 16:00 | Pentagram map, the first 21 years  | Introduction to<br>Yang-Baxter<br>equation and<br>statistical mechanics  | A unified approach to<br>smooth and discrete<br>curvatures using<br>Cartan's moving<br>frames | An introduction to<br>Teichmüller theory<br>from the triangulation<br>point of view | An introduction to<br>Teichmüller theory<br>from the triangulation<br>point of view |
|               | Serge Tabachnikov  | Vladimir Bazhanov  | Max Wardetzky   | Feng Luo  | Feng Luo  |

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## Second week

|                | Monday 16  | Tuesday 17  | Wednesday 18   | Thursday 19   | Friday 20   |
|----------------|--|---|--|---|---|
| 9:30 – 11:00   | The Lagrangian theory of discrete integrable systems | Projective differential geometry of surfaces: integrable structure and discretization                                   | Conformal deformations of surfaces                   | The Lagrangian<br>theory of discrete<br>integrable systems                            | The Lagrangian<br>theory of discrete<br>integrable systems                            |
|                | Yuri Suris   | Wolfgang Schief   | Ulrich Pinkall                                       | Yuri Suris  | Yuri Suris  |
| 11:00 – 11:30  | coffee break   | coffee break  | coffee break   | coffee break  | coffee break  |
| 11:30 – 13:00  | Conformal deformations of surfaces                   | Novel algorithms of 3D shape analysis   | Convex relaxations for image segmentation            | Projective differential geometry of surfaces: integrable structure and discretization | Projective differential geometry of surfaces: integrable structure and discretization |
|                | Ulrich Pinkall                                       | Daniel Cremers  | Daniel Cremers                                       | 0 0   | 3 0   |
| 13:00 – 14:30  | lunch break  | lunch break   | lunch break  | lunch break   | lunch break   |
| 14:30 — 16:00  | Geometric<br>reconstruction from<br>images           | Integrable systems<br>and discrete Dirac<br>operator  | Integrable systems<br>and discrete Dirac<br>operator | Conformal deformations of surfaces  | Integrable systems<br>and discrete Dirac<br>operator                                  |
|                | Daniel Cremers                                       | Vladimir Fock   | Vladimir Fock  | Ulrich Pinkall  | Vladimir Fock   |
| Evening events |  | 19:00 Book<br>presentation: G. M.<br>Ziegler, <i>Mathematik</i> –<br><i>das ist doch keine</i><br><i>Kunst</i> [German] |  |   | 17:00 Film screening:<br>Colors of Math<br>[English]                                  |