

**Enseignement Spécialisé "Models of Random Structures"  
PROGRAM**

16-20 November 2009

**Lectures: ENSMP Paris (room to be defined)**  
**Training sessions: ENSMP Paris (room L027)**

1. MONDAY NOVEMBER 16TH 2009

**Introduction and Models of Random Sets**

- *Morning (9h-12h10)*
  - 9h-10h: General Introduction (**D. JEULIN**)
  - 10h-10h20: Break
  - 10h20-12h10: Introduction to Random Sets and Functions (**D. JEULIN**)
- *Afternoon (14h-17h30)*
  - 14h-15h30: Introduction to Mathematical Morphology and to morphological measurements (Stereology, Size distributions, Covariances, distances, connectivity) (**D. JEULIN**)
  - 15h30-15h50: Break
  - 15h50-17h30: Training session: Presentation of the MICROMORPH package; measurements (**D. JEULIN, J. ESCODA, B. FIGLIUZZI, Ch. PEYREGA**)

2. TUESDAY NOVEMBER 17TH 2009

**Boolean Model and Random Tessellations**

- *Morning (9h-12h40)*
  - 9h-10h10: Introduction to Mathematical Morphology and to morphological measurements (Stereology, Size distributions, Covariances, distances, connectivity). Introduction to models of random point processes (**D. JEULIN**)
  - 10h10-10h30: Break
  - 10h30-12h: The Boolean Model; Infinitely Divisible, Semi-Markov Random Sets (**D. JEULIN**)
  - 12h-12h40: Examples of application of the Boolean Model (**D. JEULIN**)
- *Afternoon (14h-18h)*

- 14h-15h10: Models of Random Tessellations: properties and examples (Voronoi, Johnson-Mehl, Poisson and Cauwe Polyhedra) (**D. JEULIN**)
- 15h10-15h30: Break
- 15h30-18h: Training session: Measurements, Boolean Model, Random Tessellations (**D. JEULIN, J. ESCODA, B. FIGLIUZZI, Ch. PEYREGA**)

## 3. WEDNESDAY NOVEMBER 18TH 2009

• *Morning (9h-12h30)* **Models of Random Functions**

- 9h-10h15: The Mosaic Random Function Model (**D. JEULIN**)
- 10h15-10h35: Break
- 10h35-11h20: Boolean Random Functions (**D. JEULIN**)
- 11h20-12h30: Training session: Simulation of the Mosaic Model and of Boolean Random Functions (**D. JEULIN, J. ESCODA, B. FIGLIUZZI, Ch. PEYREGA**)

• *Afternoon (14h-17h30)* **Sequential Models**

- 14h-15h: Sequential Models: Dead Leaves Random Tessellation (**D. JEULIN**)
- 15h-16h: Training session: Simulation of Boolean Random Functions (**D. JEULIN, J. ESCODA, B. FIGLIUZZI, Ch. PEYREGA**)
- 16h-16h20: Break
- 16h20-17h30: Training session: Dead Leaves Random Tessellation (**D. JEULIN, J. ESCODA, B. FIGLIUZZI, Ch. PEYREGA**)

## 4. THURSDAY NOVEMBER 19TH 2009

**Sequential Models**• *Morning (9h-12h30)*

- 9h-9h50: Color Dead Leaves (**D. JEULIN**)
- 9h50-10h10: Break
- 10h10-11h30: Training session: Color Dead Leaves (**D. JEULIN, J. ESCODA, B. FIGLIUZZI, Ch. PEYREGA**)
- 11h30-12h30: Dead Leaves Random Functions (**D. JEULIN**)

• *Afternoon (14h-17h30)*

- 14h-15h30: Training session: Dead Leaves Random Functions (**D. JEULIN, J. ESCODA, B. FIGLIUZZI, Ch. PEYREGA**)
- 15h30-15h50: Break
- 15h50-16h30: Sequential Alternate Random Functions (**D. JEULIN**)
- 16h30-17h30: Training session: Sequential Alternate Random Functions (**D. JEULIN, J. ESCODA, B. FIGLIUZZI, Ch. PEYREGA**)

## 5. FRIDAY NOVEMBER 20TH 2009

- *Morning (9h-12h30)* **Reaction-Diffusion Models**
  - 9h-10h40: Dilution Random Functions; introduction to Reaction-Diffusion and to lattice gas models (**D. JEULIN**)
  - 10h40- 11h: Break
  - 11h-12h30: Training session: Dilution Random Functions (**D. JEULIN, J. ESCODA, B. FIGLIUZZI, Ch. PEYREGA**)
- *Afternoon (14h-17h)* **Examination (Preparation of a Project) and Evaluation**