



"Free and Moving Boundary Models for Root Growth, Nutrient Uptake and other Applications"

Lecturer : Prof. Juan Carlos Reginato, National University of Río Cuarto, Argentina.
Place : IWR, INF 368, Uni-Heidelberg
Organizers : Prof. Willi Jäger, Prof. Hans Georg Bock, Somporn Chuai-Aree (Meng)
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The course will be held at IWR, INF 368, University of Heidelberg. The date and time are given below:

1. June 12, 2003 at 17:15-18:30 hr. Room 432 (Thursday)
2. June 20, 2003 at 15:15-17:00 hr. Room 220 (Friday)
3. June 26, 2003 at 16:15-18:00 hr. Room 220 (Thursday)
4. June 27, 2003 at 15:15-17:00 hr. Room 220 (Friday)
5. June 30, 2003 at 16:15-18:00 hr. Room 220 (Monday)

The preliminary schedule is given below:

[On 12.06.2003 at 17:15-18:30 hr. \(General introduction course\)](#)

"The Problem of Free and Moving Boundary for Root Growth, Nutrient Uptake and Other Applications"

[On 20.06.2003 at 15:15-17:00 hr.](#)

1. The first free boundary problem. The model of Lamé and Clayperon
2. Introduction to root growth
3. Qualitative model of free boundary for root growth
4. Analytic solution. Quasi-stationary method

[On 26.06.2003 at 16:15-18:00 hr.](#)

5. Approximate solution. Integral balance method
6. Quantitative Moving boundary model for nutrient uptake and their calculation
7. Experimental determination of input model parameters
8. Simultaneous absorption of ions and effects on nutrient uptake

On 27.06.2003 at 15:15-17:00 hr.

- 9. Other numerical methods for nutrient uptake. Finite Differences
- 10. Water uptake. The moving boundary model

On 30.06.2003 at 16:15-18:00 hr.

- 11. Soil spherical aggregates aeration. The free boundary model and their numeric solution
- 12. The lines (shooting) method

If you have any questions about the course, please send email to :

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