Mathematical Modelling for Bioprocesses,
Wastewater Treatment and Mineral Processing
Third CI²MA Workshop, organized jointly with CRHIAM
Universidad de Concepción, September 27 and 28, 2017
Auditorio Alamiro Robledo, Facultad de Ciencias Físicas y Matemáticas
Organizers[1]: Fernando Betancourt & Raimund Bürger

Practical information

People interested in attending the workshop should register with CI²MA secretary:

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Programme

Wednesday, September 27

15.00   Registration and Welcome

Session 1: Models of sedimentation in mineral processing

15.30   **Julio Careaga** (Universidad de Concepción):
Modelling and numerical simulation of sedimentation in conical vessels

16.00   **Manuel Larenas, Pamela Garrido** (Centro de Investigación JRI, Chile):
Numerical simulation of solid-liquid separation
applied to industrial thickening of mining slurries

16.30   **Alonso Pereira, Fernando Betancourt, Fernando Concha,**
Daniel Sbárbaro (Universidad de Concepción):
Process dynamics and control of industrial thickeners

17.00   **Coffee break**

Session 2: Multi-species systems

17.30   **Pep Mulet** (Universitat de València, Spain):
Implicit-explicit conservative schemes
for the equilibrium dispersive model of chromatography

18.00   **M. Carmen Martí** (Universidad de Concepción):
Unified multi-class framework to model settling tanks
in water resource recovery facilities

18.30   <u>**Diana Celi**</u>**, Fernando Concha, Christian Goñi** (Universidad de Concepción):
Determination of the volumetric solids fraction
of saturated polydisperse ore tailing sediments

20.30   **Workshop Dinner**

Thursday, September 28
Session 3: Flotation, tailings, and slurry flow in mineral processing

09.30   **Stefan Diehl** (Lund University, Sweden):
A model of a flotation column described by a conservation law
with multiply discontinuous flux

10.00   <u>**Claudia Castillo**</u> (CSIRO Minerals Chile), **Christian Ihle** (Universidad de Chile):
Effect of salinity on the dynamics of flocculation
of copper sulphide tailings with clay content

10.30   **Cristian Reyes**, <u>**Christian Ihle**</u> (Universidad de Chile):
CFD simulation of cation exchange in slurry pipeline flow

11.00   **Coffee break**

Session 4: Reactive models

11.30   **Elena Torfs** (ModelEau, Université Laval, Québec, Canada):
Full scale measurements and model development
for reactive settling of activated sludge

12.00   <u>**Elisa Giustinianovich**</u> (Universidad de Concepción),
José Luis Campos-Gómez (Universidad Adolfo Ibáñez),
Camilo Mejías, **Marlene Roeckel** (Universidad de Concepción):
Granular partial nitritation/Anammox process: why modelling and main challenges

12.30   **Camilo Mejías** (Universidad de Concepción):
Modelling biofilm growth in a granular sludge bioreactor

13.00   **Closing remarks**