

Session Program

12-17 Jul 2026



**European Conference on Mathematical and Theoretical
Biology (ECMTB 2026)**

Modelling the mechanical behaviour of cells

University of Graz

Thursday 16 July

17:00

Modelling the mechanical behaviour of cells

Session | Location: University of Graz, 03.01 - HS

17:00–17:20 Alignment processes in cells: From individual interactions to collective behaviour

Speaker

Angelika Manhart

17:20–17:40 A Phase-field Model for multi-nucleated myofiber formation through cytoplasmic fusion

Speaker

Daniel A. Vaughan

17:40–18:00 A geometric surface PDE framework to model cell migration

Speaker

David Hernández-Aristizábal

18:00–18:20

Modeling active cell migration in complex confined environments: The interplay between nuclear mechanics, chemotaxis, and obstacle geometry

Speaker

Francesca Ballatore

18:20

Friday 17 July

10:40

Modelling the mechanical behaviour of cells

Session | Location: University of Graz, 03.01 - HS

10:40–11:00

From epithelial architecture to chemotaxis and polarity: multiscale mechanical modeling of cell behavior with CompuCell3D

Speaker

James A. Glazier

11:00–11:20

Guidance by followers: inference of microscopic mechanical cell coordination through quantitative modelling

Speaker

Jörn Starruß

11:20–11:40

Upscaling between an agent-based model (smoothed particle approach) and a continuum-based model for cellular forces

Speaker

Qiyao (Alice) Peng

11:40–12:00

A purely mechanical model with bending bacteria for early morphogenesis of micro-colony growth

Speaker

Sophie Hecht

12:00