



Technical Program

Warsaw, May 11-13, 2016

CMIS 2016 is organized by



Institute of Fundamental Technological Research
Polish Academy of Sciences



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PROGRAMME AT A GLANCE

	WEDNESDAY, 11.05.2016	THURSDAY, 12.05.2016	FRIDAY, 13.05.2016
08:00	8:00 – 9:00 REGISTRATION		
08:20			
08:40			
09:00	9:00 – 9:40 OPENING	9:00 – 10:40 THU 01 SESSION	9:00 – 10:40 FRI 01 SESSION
09:20			
09:40	9:40 – 10:40 WED 01 SESSION		
10:00			
10:20			
10:40	10:40 – 11:20 COFFEE BREAK	10:40 – 11:20 COFFEE BREAK	10:40 – 11:20 COFFEE BREAK
11:00			
11:20	11:20 – 12:40 WED 02 SESSION	11:20 – 13:00 THU 02 SESSION	11:20 – 12:40 FRI 02 SESSION
11:40			
12:00			
12:20			
12:40	12:40 – 14:20 LUNCH BREAK	13:00 – 14:40 LUNCH BREAK	12:40 – 14:20 LUNCH BREAK
13:00			
13:20			
13:40			
14:00			
14:20	14:20 – 15:40 WED 03 SESSION	14:40 – 16:00 THU 03 SESSION	14:20 – 16:00 FRI 03 SESSION
14:40			
15:00			
15:20			
15:40	15:40 – 16:20 COFFEE BREAK	16:00 – 16:40 COFFEE BREAK	16:00 – 16:40 COFFEE BREAK
16:00			
16:20	16:20 – 18:00 WED 04 SESSION	16:40 – 19:40 EXCURSION	
16:40			
17:00			
17:20			
17:40			
18:00			
18:20	18:20 – 20:20 GET-TOGETHER PARTY		18:00 – 19:00 TRANSFER
18:40			
19:00			
19:20			
19:40			
20:00			19:00 – 22:20 CONFERENCE DINNER
20:20			
20:40			
21:00			
21:20			
21:40			
22:00			
22:20			22:20 – 23:00 TRANSFER
22:40			
23:00			

WEDNESDAY 11.05.2016

8:00–9:00 REGISTRATION

9:00–9:40 CONFERENCE OPENING

9:40–10:40 **WED 01 SESSION**

Chairman: P. Wriggers

- 9:40–10:00 Y. Renard
Some fictitious domain approaches for the contact of deformable structures (P005)
- 10:00–10:20 P. Massin, G Ferté and N. Moës
Modelling strong and weak discontinuities with X-FEM (P041)
- 10:20–10:40 M. Hiermeier, W.A. Wall and A. Popp
A robust augmented Lagrangian mortar-type formulation for finite deformation contact problems (P012)

10:40–11:20 COFFEE BREAK

11:20–12:40 **WED 02 SESSION**

Chairman: Y. Renard

- 11:20–11:40 P. Wriggers, W. Rust and B.D. Reddy
A Virtual Element Method for Contact (P009)
- 11:40–12:00 R. Kruse, N. Nguyen-Thanh, L. De Lorenzis, P. Wriggers
Isogeometric frictionless contact analysis with the third medium method (P023)
- 12:00–12:20 R. Mlika, Y. Renard and F. Chouly
An unbiased Nitsche's approximation of contact between two elastic structures (P011)
- 12:20–12:40 Z. Dostal, T. Kozubek, T. Brzobohaty, V. Hapla, D. Horak, A. Markopoulos, O. Vlach
Massively parallel algorithms for contact problems - theory and experiments (P010)

12:40–14:20 LUNCH BREAK

WEDNESDAY 11.05.2016

14:20–15:40 WED 03 SESSION

Chairman: Z. Dostal

- 14:20–14:40 S. Stühler and P. Eberhard
Simulation of complex-shaped particle geometries with the discrete element method (P027)
- 14:40–15:00 J. Rojek, K. Jurczak, S. Nosewicz, D. Lumelskyj and M. Chmielewski
Contact models for discrete element simulation of the initial powder compaction in a hot pressing process (P038)
- 15:00–15:20 D. Horak, Z. Dostal, V. Hapla, O. Vlach, L. Pospisil, M. Cermak, R. Sojka
PERMON's scalable quadratic programming solvers for contact problems based on TFETI (P029)
- 15:20–15:40 R. Vodicka, V. Mantic and T. Roubicek
A new procedure for the solution of quasistatic frictional contact problems by the symmetric Galerkin boundary element method and quadratic programming (P043)

15:40–16:20 COFFEE BREAK

16:20–18:00 WED 04 SESSION

Chairman: M. Raous

- 16:20–16:40 M. Cocou
A variational analysis of a dynamic contact problem with Coulomb friction (P032)
- 16:40–17:00 S. Migórski
History-dependent variational-hemivariational inequalities with applications to dynamic contact problem in viscoelasticity (P002)
- 17:00–17:20 P. Krejci, A. Petrov
Existence and uniqueness results for dynamic thermo-elastic-plastic contact problems (P016)
- 17:20–17:40 A. Rodriguez Aros
Models of elastic shells in contact with a rigid foundation (P021)
- 17:40–18:00 A. Ochal and S. Migórski
Dynamic frictional contact of a thermoviscoelastic body with an obstacle (P015)

18:20–20:20 GET-TOGETHER PARTY

THURSDAY 12.05.2016

9:00–10:40 **THU 01 SESSION**

Chairman: U. Nackenhorst

- 9:00–9:20 M.L. Raffa, F. Lebon and G. Vairo
Interfacial stiffnesses of rough surfaces in no-sliding contact via an imperfect interface approach (P007)
- 9:20–9:40 R. Buczkowski, M. Kleiber and A. Rzeczycki
A finite element study of the surface roughness in elasto-plastic shrink fitted joint (P045)
- 9:40–10:00 I. Argatov, R. Pohrt, and V.L. Popov
Multi-scale asymptotic modelling of a cluster of adhesive micro-contacts (P001)
- 10:00–10:20 N. Papadogianni, N. Kaminakis, G.A. Drosopoulos and G.E. Stavroulakis
Contact assisted auxetic microstructures (P028)
- 10:20–10:40 S. Kucharski, G. Starzynski
Flattening of loaded rough surfaces: normal contact versus sliding contact (P046)

10:40–11:20 COFFEE BREAK

11:20–13:00 **THU 02 SESSION**

Chairman: R. Sauer

- 11:20–11:40 U. Nackenhorst, R.L. Gates, M. Bittens, and R. Beyer
On the homogenization of rubber-rough-surface-contact using an adaptive stochastic collocation scheme (P020)
- 11:40–12:00 P. Wagner, P. Wriggers, H. Clasen and C. Prange
Validation of a multiscale FEM approach for elastomer friction on rough surfaces (P024)
- 12:00–12:20 K. Houanoh, H.-P. Yin and Q.-C. He
Contact of viscoelastic bodies with periodically wavy surfaces (P040)
- 12:20–12:40 I. Goryacheva, E. Torskaya
Contact of multi-level periodic system of indenters with homogeneous and two-layered elastic half-space (P031)
- 12:40–13:00 A. Chudzikiewicz, A. Myśliński
Elasto-plastic rolling contact problems with nonhomogeneous materials (P022)

13:00–13:15 CONFERENCE PHOTO

13:15–14:40 LUNCH BREAK

THURSDAY 12.05.2016

14:40–16:00 **THU 03 SESSION**

Chairman: H. Ben Dhia

- 14:40–15:00 Z. Mróz, S. Kucharski
Anisotropic friction and wear rules with account for anisotropy evolution (P044)
- 15:00–15:20 C. Stolz
Integral equation with variations of domain: applications to wear contact (P036)
- 15:20–15:40 P. Farah, W.A. Wall and A. Popp
Towards an implicit finite wear formulation for non-smooth contact geometries (P013)
- 15:40–16:00 A. Zmitrowicz
Modelling of wear of materials in terms of variational methods (P019)

16:00–16:20 COFFEE BREAK

16:20–19:40 EXCURSION

FRIDAY 13.05.2016

9:00–10:40 **FRI 01 SESSION**

Chairman: G.E. Stavroulakis

- 9:00–9:20 R. Vodicka, T. Roubicek and V. Mantic
Modelling of frictional cohesive contacts (P008)
- 9:20–9:40 A. Papangelo, M. Ciavarella and J. Barber
On a Griffith condition for the stick-slip boundary (P004)
- 9:40–10:00 N. Terfaya, M. Raous, A. Berga
A bipotential method coupling contact, friction and adhesion (P006)
- 10:00–10:20 G. Del Piero
The two fundamental fracture modes of one-dimensional bars (P014)
- 10:20–10:40 I.P. Shatskyi
Cracks closure in thin plates and shells: mixed problems and analytical solutions (P030)

10:40–11:20 COFFEE BREAK

11:20–12:40 **FRI 02 SESSION**

Chairman: J. Rojek

- 11:20–11:40 V.A. Yastreboy, D.S. Kammer
Elastodynamic frictional sliding of an elastic layer on a rigid flat: stick-slip pulses and opening waves (P037)
- 11:40–12:00 D. Schurr and P. Eberhard
Contact calculation in elastic multibody gear systems using different kind of model order reduction methods (P026)
- 12:00–12:20 L. Rodríguez-Tembleque, F.C. Buroni, A. Sáez and F.M.H. Aliabadi
Indentation response of magneto-electro-elastic materials under frictional contact (P018)
- 12:20–12:40 J. Lengiewicz, M. Kurska, P. Hołobut
Two-domain contact model of volumetric actuators (P047)

12:40–14:20 LUNCH BREAK

FRIDAY 13.05.2016

14:20–16:00 FRI 03 SESSION

Chairman: C. Stolz

- 14:20–14:40 H. Ben Dhia, S. Du
Multi-numeric and multi-physics modeling of multiscale contact problems (P042)
- 14:40–15:00 J. Gwinner and D. Natroshvili
Contact problems in piezoelectricity – Mathematical modelling and boundary element approximation (P033)
- 15:00–15:20 A.B. Kunin, S. Loehnert, P. Wriggers
Thermo-mechanical contact between crack surfaces in the eXtended Finite Element Method (P035)
- 15:20–15:40 R.A. Sauer
Contact algorithms for liquid droplets (P039)
- 15:40–16:00 S. Stupkiewicz, J. Lengiewicz, P. Sadowski and I. Temizer
Finite deformation effects in soft elastohydrodynamic lubrication problems (P048)

16:00–16:40 COFFEE BREAK

17:20 TRANSFER TO JABŁONNA (IPPT)
17:45 TRANSFER TO JABŁONNA (CITY CENTRE)

19:00– CONFERENCE DINNER