

## German-Russian Workshop

### **Wear: physical backgrounds and numerical simulation**

Technical University Berlin

5-7 April 2006

#### **Location**

The Workshop will take place at the TU Berlin, building MS, room MS 107, Einsteinufer 5, D-10587 Berlin (see attached campus plan of the Berlin Technical University).

**Conference fee:** participants from the industry: **100,- €** participants from universities and speaker: **50,- €** member of TU Berlin: free

#### **Registration**

Please return the registration form to the address below as soon as possible but not later than March 25, 2006 (preferably via Fax or E-mail).

#### **Organisation & contact**

Prof. Dr. Valentin Popov  
TU Berlin  
Institute of Mechanics  
Sekt. C8-4  
Str. des 17. Juni 135  
D-10623 Berlin, Germany

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Fax.: +49 (30) 314 72 575  
E-mail: v.popov@tu-berlin.de  
<http://mechanik.tu-berlin.de/popov>

## Program

### **5. April**

9:00-10:00 Guided tour through the Institute of Mechanics (Building M)  
10:00 - 12:00 Partial Workshops in small groups

15:00 - 16:00 Registration (Building MS)

16:00 - 18:00 Round table

### **6. April**

8:00 - 8:50 Registration (Building MS)

8:50 - 9:00 opening: *Popov V.L.*

*Chair: Psakhie S.G.*

9:00 - 9:40 Popov V.L.  
**Numerical simulations of wear**  
*TU Berlin, Germany*

9:40 - 10:20 Ostermeyer G.P.  
**Dynamics of Friction and Wear in Contact zones**  
*Technical University Braunschweig, Germany*

10:20 - 11:00 Scherge M.  
**Microscopic and mesoscopic mechanisms of wear**  
*IAVW Antriebstechnik AG, Karlsruhe, Germany*

11:00 - 11:20 *coffee break*

	<i>Chair: Ostermeyer G.P.</i>
11:20 - 12:00	Filippov A.E., Popov V.L. <b>Damage, ageing and wear in rubber</b> <i>Donetsk, National Academy of Sciences of Ukraine</i>
12:00 - 12:40	Geike T., Popov V.L., <b>Reduced description of lubricated contacts with cavitation</b> <i>TU Berlin, Germany</i>

12:40 - 14:30 *lunch*

	<i>Chair: Scherge M.</i>
14:30 - 15:10	Daves W. <b>Modeling of the severe surface deformation produced in a rolling/sliding contact of wheels</b> <i>Materials Center Leoben, Montanuniversität Leoben, Austria</i>
15:10 - 15:50	Müller M., Ostermeyer G.P. <b>A 3D-Cellular Automaton simulation of mesoscopic wear mechanisms in brake systems</b> <i>Technical University Braunschweig, Germany</i>
15:50 - 16:30	Schargott M <b>Development of surface topography and wear: description with stochastic differential equations</b> <i>TU Berlin, Germany</i>

16:30 - 16:50 *coffee break*

	<i>Chair: Filippov A.E.</i>
16:50 - 17:30	Kulkov S.N., <b>Structure of ZrO<sub>2</sub>-Y<sub>2</sub>O<sub>3</sub> and ZrO<sub>2</sub>-Y<sub>2</sub>O<sub>3</sub>-Al<sub>2</sub>O<sub>3</sub> nanocrystalline powders and wear mechanism of zirconia-steel couples</b> <i>Institute for Strength Physics and Materials Science, Russian Academy of Sciences</i>
17:30 - 18:10	Dmitriev A.I., Oesterle W., Kloss H., <b>Computer-aided modeling of local contact situations in automotive brakes with method of movable cellular automata</b> <i>Russian Academy of Sciences, Tomsk, Russia; BAM Berlin, Germany</i>

## 7. April

	<i>Chair: Popov V.L.</i>
9:00 - 9:40	Psakhie S.G. <b>Tribological research at the Institute of Strength and Materials Science</b> <i>Russian Academy of Sciences, Tomsk, Russia</i>
9:40 - 10:20	Urbakh M. <b>Nano and Micro Scale Engines</b> <i>Tel Aviv University, Israel</i>
10:20 - 11:00	Herbrich U. <b>Numerical simulations of chemical-mechanical polishing (CMP)</b> <i>TU Berlin</i>

11:00 - 11:20 *coffee break*

	<i>Chair: Urbakh M.</i>
11:20 - 12:00	Ostermeyer G.-P. <b>Simulations of friction and wear with method of meso particles</b> <i>Braunschweig University, Germany</i>
12:00 - 12:40	Heß M. <b>Hierarchical lattice models</b> <i>TU Berlin, Germany</i>

12:40 - 14:30 *lunch*

*Chair: Schargott M.*

14:30 - 15:10

Shilko E.

**Simulation of wear in rubber with the method of movable cellular automata**

*Russian Academy of Sciences, Tomsk, Russia*

15:10 - 15:50

Putzar G.

**Tribospectroscopical studies of friction processes**

*TU Berlin, Germany*

15:50 – 16:30

Lasko G.

**Simulation of anisotropic plastic deformation and damage by indentation via method of relaxation elements**

*Russian Academy of Sciences, Tomsk, Russia*

16:30 – 16:40

Closing

Prof. Dr. Valentin Popov  
Technische Universität Berlin  
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**D-10623 Berlin**

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E-mail: v.popov@tu-berlin.de

*Please return this form to the above address as soon as possible but **not later than March 27, 2006** (preferably via Fax or E-mail).*

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Registration Form

German-Russian Workshop

**Wear: physical backgrounds and numerical simulation**

Technical University Berlin

5-7 April 2006

First Name \_\_\_\_\_

Middle Name \_\_\_\_\_

Last Name \_\_\_\_\_

Title     Prof.     Dr.     Mr.     Ms.

Position \_\_\_\_\_

Organization \_\_\_\_\_

Country \_\_\_\_\_

City \_\_\_\_\_ Postal code \_\_\_\_\_

Mail Address \_\_\_\_\_

Telephone \_\_\_\_\_ Fax \_\_\_\_\_

E-mail \_\_\_\_\_

I plan to participate at:

- Round table on 05.04.06    Sessions on 06.04.05    Sessions on 07.04.06    Guided tour through the Institute of Mechanics on 05.04.06

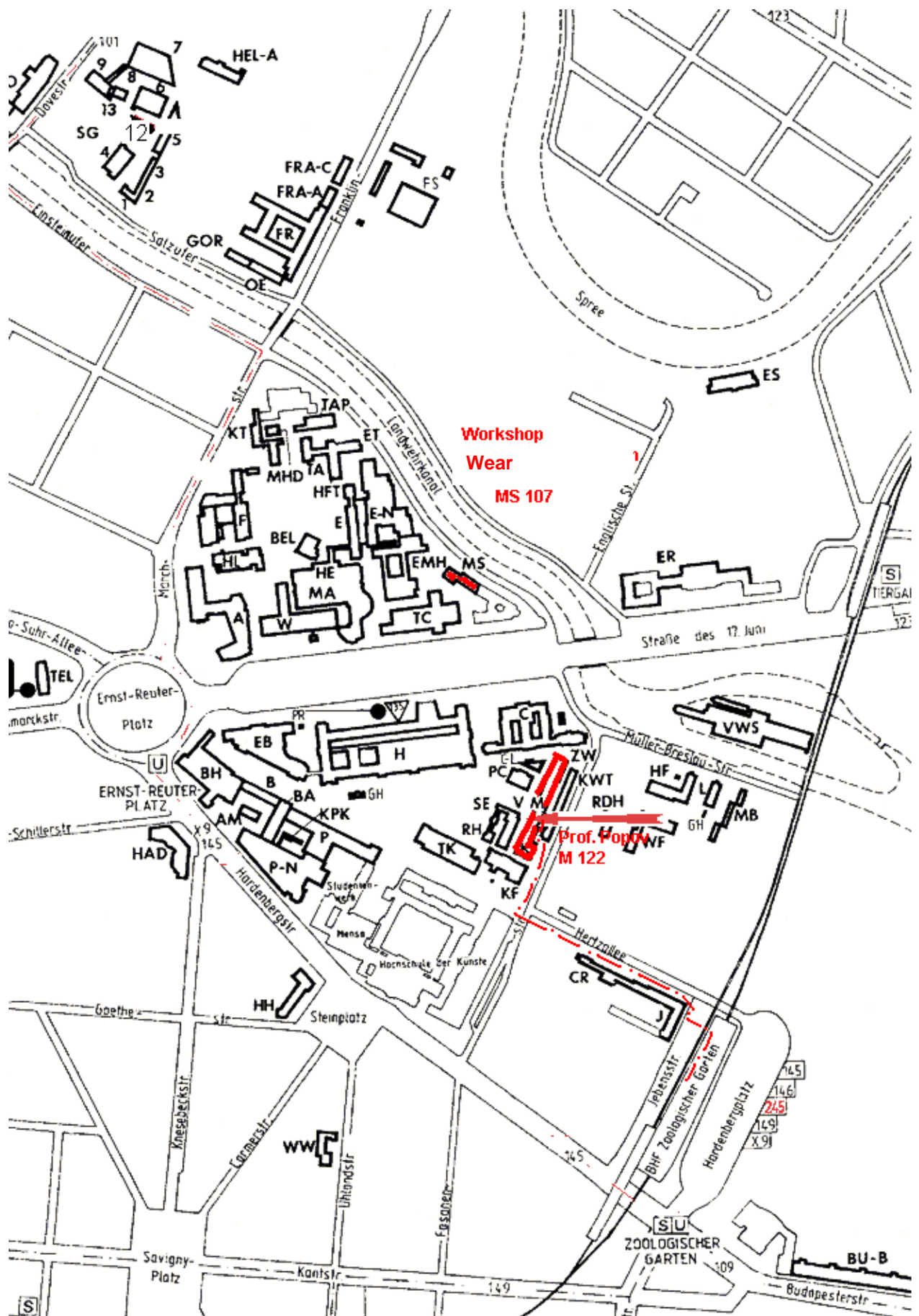
**Conference fee:**

- participants from the industry: **100,- €**
- participants from universities and speaker: **50,- €**
- member of TU Berlin: free

I will transfer the conference fee to the account:      I will pay the conference fee on registration

V. Popov, Sonderkonto/Sondermittel  
Postbank Berlin  
BLZ: 100 100 10  
Kontonummer: 823 570 104

[ IBAN: DE 66 1001 0010 0823 5701 04 ]  
[ SWIFT-Code (BIC): PBNKDEFF100 ]



## The Way to the Institute of Mechanics



### By Air

- International Airport Berlin-Tegel
  - By taxi (approx. 15 min.);
  - By Airport-Express-Bus Transfer-Line X9 (approx. 25 min.) or by City-bus Line 109 (approx. 45 min.) to the stop "Zoologischer Garten" and then as described from train station "Berlin-Zoo" to the IfM.
- International Airport Berlin-Schönefeld
  - By taxi (approx. 45 min.);
  - By AirportExpress-Train (approx. 35 min.) or RegionalExpress-Train (approx. 40 min.) to the stop "Zoologischer Garten" and then as described from train station "Berlin-Zoo" to the IfM.
  - By S-Bahn Line S9 (approx. 60 min.) to the stop "Zoologischer Garten" and then as described from train station "Berlin-Zoo" to the IfM.
- International Airport Berlin-Tempelhof
  - By taxi (approx. 30 min.);
  - By Underground Line U6 and Line U2 (approx. 45 min.) to the stop "Zoologischer Garten" and then as described from train station "Berlin-Zoo" to the IfM.



### By Train

- Train Station "Berlin-Zoo"
  - By taxi (approx. 10 min.);
  - On foot (approx. 10 min.) via Jebensstraße, Hertzallee, crossing the Fasanenstrasse and entering the campus, then turn right to the building "Gebäude M").



### By Car

- From the direction of Hannover, Leipzig, Nürnberg:
  - take the motorway A115 (Avus) to Charlottenburg A100, exit "Spandauer Damm", turn right into and follow "Otto-Suhr-Allee" until you reach the circle "Ernst-Reuther Platz", take the third exit "Straße des 17. Juni", keep straight right to enter the campus.
- From Northern Europe, direction Hamburg, Rostock:
  - take the motorway A111 to Charlottenburg A100, exit "Spandauer Damm", turn left into and follow "Otto-Suhr-Allee" until you reach the circle "Ernst-Reuther Platz", take the third exit "Straße des 17. Juni", keep straight right to enter the campus.