17th Annual Meeting of the International Society for Computer Assisted Orthopaedic Surgery

14 – 17 JUNE 2017
AACHEN, Germany

www.caos2017.de
Questions:

• Where and what is Aachen?
• Why CAOS 2017 in Aachen?
• What will be CAOS 2017 in Aachen?
• How to tell my family to go to Aachen?
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Aachen @ the Center of Europe
Aachen – a town in the Euregio
(three lands region: Maastricht – Liège – Aachen)
Aachen (Aix-la-Chapelle) - a charming City

Charlemagne’s Chapel at his Court in Aachen (UNESCO World Cultural Heritage)

Town Hall

Elisen Hot Springs

Charles Therme

Lake Rur

Water in (and around) Aix-la-Chapelle (Aachen)

CHIO, the World Equestrian Festival

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Aachen - an excellent site for interdisciplinary research!

- 50,000 Students
- 5,000 Researchers
- 500 Professors
- Leading German Engineering Education and Research
- Medical Faculty since 1966
- Largest Institute for Biomedical Engineering in D-A-CH
- Largest Interdisciplinary Campus Lifesciences
An excellent site for interdisciplinary research:

**Surgical Navigation was born in Aachen: 1986-1987**

*(First Applications in ENT and Neurosurgery)*

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Prof. G. Schlöndorff, MD

Prof. D. Meyer-Ebrecht, PhD

1986-87


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Individual Templates („PSI“) were born in Aachen

- 1988-1992 First concepts of PSI and patent (individual templates) CAOS (Radermacher et al. 1992)
- 1993 First human intervention with PSI (Radermacher et al. 1994)

First CAS Tripel-Periacetabular Repositionning Osteotomie With individual templates: 1993 by Prof. Staudte, Aachen/Würselen
An excellent site for interdisciplinary research:

... (More to come ...)
Awards in Aachen: Prix International Charlemagne
(Selected Awardees you may know:)

(If you are not candidate for the Charlemagne Award for European Integration...)

Win your CAOS Award in Aachen 2017 !!!
### Accessibility

**- Airports**

<table>
<thead>
<tr>
<th>Airport</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maastricht/Aachen (MAA)</td>
<td>ca. 22 miles</td>
</tr>
<tr>
<td>Liège (LGG)</td>
<td>ca. 40 miles*</td>
</tr>
<tr>
<td>Cologne/ Bonn (CGN)</td>
<td>ca. 55 miles</td>
</tr>
<tr>
<td>Düsseldorf (DUS)</td>
<td>ca. 60 miles</td>
</tr>
<tr>
<td>Brussels (BRU)</td>
<td>ca. 90 miles</td>
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<tr>
<td>Dortmund (DTM)</td>
<td>ca. 100 miles</td>
</tr>
<tr>
<td>Frankfurt a.M. (FRA)</td>
<td>ca. 170 miles</td>
</tr>
</tbody>
</table>

*about the distance from Osaka Kansai International Airport to Osaka Down Town/Conference Center*
### ICE High Speed Train

<table>
<thead>
<tr>
<th>City Pairs</th>
<th>Time</th>
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<tbody>
<tr>
<td>Liège – Aachen</td>
<td>0,5 h</td>
</tr>
<tr>
<td>Cologne – Aachen</td>
<td>1 h*</td>
</tr>
<tr>
<td>Düsseldorf – Aachen</td>
<td>1,5 h</td>
</tr>
<tr>
<td>Brussels – Aachen</td>
<td>1 h*</td>
</tr>
<tr>
<td>Dortmund – Aachen</td>
<td>2,5 h</td>
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<tr>
<td>Amsterdam – Aachen</td>
<td>3,5 h</td>
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<tr>
<td>Frankfurt a.M. – Aachen</td>
<td>1,8 h</td>
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<tr>
<td>Paris – Aachen</td>
<td>2,5 h</td>
</tr>
<tr>
<td>London – Aachen</td>
<td>4 h</td>
</tr>
</tbody>
</table>

*about the distance from Osaka Kansai International Airport to Osaka Down Town/Conference Center*
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Meeting Formats

- Preconference Workshops (Wednesday)
- Free papers session (clinical, technical, interdisciplinary)
- Poster and Special poster exhibit
- Keynote lectures
- Round table discussions
- Hands-on workshops for clinicians and researchers
- Industry exhibit
- Industrial career workshops for students (4-6 pm on Thursday and Friday: free access for students from RWTH Aachen University and other Universities)
Topics – CAOScience, Surgery and related fields

• State-of the-art systems in CAOS
• Critical review of clinical trends and results
• Quality control in and with CAOS (Surgical Monitoring)
• CAOS – a tool in Education & Training
• CAOS in basic medical research
• New technical tools, components and developments (algorithms, sensors, actors, robotics,...)
• Open source software
• Imaging for CAOS (Fluoro, CT, MRI, US, OCT, Elastography, upright/dynamic imaging,...)
Topics – CAOScience, Surgery and related fields

• Model based Computer Integrated Personalised Orthopaedics
  – Computer Assisted Personalized Musculo-Skeletal Biomechanics
  – Model based prevention & conservative therapy,
  – personalised therapy (strategies, surgical planning, smart surgical devices, navigation and robotics); personalized implants and instruments
  – personalized model based rehabilitation

• Usability Engineering and Work flow integration; Surgical Monitoring

• Additive manufacturing („3D-printing“) & rapid manufacturing in CAOS

• OR.NET - Secure dynamic networks („IOT“) in OR and clinic

• Medical Apps for CAOS
Computer Assisted Orthopaedic Science and Surgery

- **Acquisition – Information on Demand:** Medical Imaging & Sensors, Signal & Image Processing & Registration, Medical Apps
- **Documentation:** Knowledge Data Base for Quality & Risk Management, Research & Development, Training & Education, Cost Efficiency & Optimization
- **Computer Integrated Patient Specific Model Guided Surgical Therapy**
- **Modelling, Simulation&Planning - Surgery & Rehabilitation Strategies & Techniques, Workflows & Biomechanics**
- **Integration - Assist on Demand:** Secure Dynamic Networks & Interoperability (Internet of Things & Human-Technology-Interaction), Clinical Workflows & Surgical Monitoring
- **Smart Tools - Assist on Demand:** Smart Patient Specific Manufacturing, Smart Instruments, Devices & Implants, Navigation & Robotics

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Local Organising Team

Markus Tingart, MD - Björn Rath, MD (Aachen)
Christian Lüring, MD (Dortmund)
Jörg Eschweiler, PhD - Matias de la Fuente, PhD –
Sabine Stockschräder-Krüger - Klaus Radermacher, PhD

Conference Management Team

Nadia Al-Hamadi
Cyntia Rammel
Venue – Eurogress Aachen
Venue – Eurogress Aachen

Plenary hall

Seminar rooms

Foyer

Foyer
## Hotels in Aachen

### Pullmann Hotel Quellenhof*****

<table>
<thead>
<tr>
<th>Category</th>
<th>Hotel Quantity</th>
<th>Rooms</th>
<th>Beds</th>
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</thead>
<tbody>
<tr>
<td>Luxury</td>
<td>1</td>
<td>183</td>
<td>312</td>
</tr>
<tr>
<td>Upscale</td>
<td>9</td>
<td>791</td>
<td>1456</td>
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<tr>
<td>Midscale</td>
<td>10</td>
<td>328</td>
<td>579</td>
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<tr>
<td>Economy</td>
<td>3</td>
<td>334</td>
<td>481</td>
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<tr>
<td>Low Budget</td>
<td>22</td>
<td>617</td>
<td>1274</td>
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<td><strong>2253</strong></td>
<td><strong>4102</strong></td>
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### Distance to Eurogress Conference Center

<table>
<thead>
<tr>
<th>Distance to Conference Center</th>
<th>Category</th>
<th>Hotel Quantity</th>
<th>Rooms</th>
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<tr>
<td>≤ 10 minutes by feet</td>
<td>*****</td>
<td>1</td>
<td>183</td>
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<tr>
<td></td>
<td>****</td>
<td>4</td>
<td>366</td>
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<td></td>
<td>***</td>
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<td>56</td>
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<tr>
<td></td>
<td>**</td>
<td>1</td>
<td>102</td>
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<tr>
<td></td>
<td>****</td>
<td>1</td>
<td>97</td>
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<tr>
<td></td>
<td>***</td>
<td>3</td>
<td>206</td>
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<td></td>
<td>**</td>
<td>2</td>
<td>144</td>
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<tr>
<td>≤ 20 minutes by feet</td>
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<td>99</td>
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<td>***</td>
<td>4</td>
<td>107</td>
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<td></td>
<td>**</td>
<td>1</td>
<td>104</td>
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<tr>
<td>≤ 30 minutes by feet</td>
<td>****</td>
<td>2</td>
<td>110</td>
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<tr>
<td></td>
<td>***</td>
<td>4</td>
<td>164</td>
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<tr>
<td>≤ 40 minutes by feet</td>
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</tr>
</tbody>
</table>
Facuity/Presidential dinner: Stolberg Castle (10 miles)

Stolberg Castle was built in the 12th century. Within its historic ambience in the middle of Stolberg Downtown both food and style of knighthood are to be enjoyed.
Conference dinner: Aachen Townhall (14th century)
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time 4 your family
Sight Seeing in Aachen (Aix-la-Chapelle)

Town Hall

Down Town

Cathedral (UNESCO World Heritage)
Aachen (Aix-la-Chapelle) - town of SPA
(lat.: „Sanus Per Aquam“ – Healthy by Water)
Do like the Romans did...

Lake Rur (Hiking, Swimming, Sailing,...)

Elisenbrunnen Hot Springs

Carolus Thermen (Wellness Resort)
Valkenburg (Netherlands; 17 miles)

Downtown

Castle (11th Century)

Caves
Caves of Remouchamps (Belgium; 35 miles)
Safari Park „Monde Sauvage“ Aiwaille (Belgium; 35 miles)
Cologne Cathedral and Downtown
(50 miles / 50 min by train)
Chateau Brühl
(44 miles)
Rhine Valley (50 miles)
Eltz Castle (12th century; 95 miles)
Safari Park „Monde Sauvage“ Aiwaille (Belgium; 35 miles)
Phantasia Park Brühl (44 miles)
Efteling Park
Kaatsheuvel (NL)
(90 miles)
### Further valuable destinations

<table>
<thead>
<tr>
<th>Destination</th>
<th>Distance</th>
<th>Train hours</th>
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</thead>
<tbody>
<tr>
<td>Liège – Aachen</td>
<td>58 km</td>
<td>0,5 h</td>
</tr>
<tr>
<td>Cologne – Aachen</td>
<td>78 km</td>
<td>&lt;1 h</td>
</tr>
<tr>
<td>Düsseldorf – Aachen</td>
<td>85 km</td>
<td>1,5 h</td>
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<tr>
<td>Brussels – Aachen</td>
<td>143 km</td>
<td>1 h</td>
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<tr>
<td>Amsterdam – Aachen</td>
<td>229 km</td>
<td>3,5 h</td>
</tr>
<tr>
<td>Maastricht – Aachen</td>
<td>38 km</td>
<td>&lt;1 h</td>
</tr>
<tr>
<td>Paris – Aachen</td>
<td>423 km</td>
<td>2,5 h</td>
</tr>
<tr>
<td>London – Aachen</td>
<td>509 km</td>
<td>4 h</td>
</tr>
</tbody>
</table>