

## **3<sup>rd</sup> IONM Advanced Summer (Spring) School of the DGKN/FBA – Final Programme –**

EACCME credit points have been applied for.



### **Contents**

The topics cover great parts of the spectrum of the Basic Courses and serve to deepen knowledge, particularly with regard to practical application techniques and interpretation. The topics underly partially a rotation concept. Peri- and intraoperative mapping and monitoring of cerebral and spinal cord functions represent the yearly standard programme. In contrast, mapping and monitoring in skull base and cerebellar-pontine angle (CPA) surgeries will not be part of this programme but enter as a hot topic in 2027. In 2026, emphasis will be put on peri- and intraoperative neurography and neurosonography of peripheral nerves and the brachial plexus, mapping and monitoring of the conus/cauda region including spinal root mapping in selective dorsal rhizotomy and intraoperative mapping and monitoring in deep brain stimulation (DBS).

### **Dates**

March 15-18, 2026

### **Registration**

If you have not attended the DGKN Basics Courses, please send a short letter of interest along with a list/prove of previous courses/experience in the context of perioperative and intraoperative mapping and neuromonitoring and the registration form to the head office of the German Society of Clinical Neurophysiology and Functional Neuroimaging (DGKN): [sekretariat@dgkn.de](mailto:sekretariat@dgkn.de).

The acceptance of your registration will depend on the total number of applicants and your personal level of expertise. For those who have completed both DGKN Basic Courses, filling in the [registration form for the summer school](#) is sufficient for registration (*direct link or cf. QR-code above!*).

## Notes

The summer school is **limited to 30 participants** (excluding faculty and industry staff). Priority access will be granted to members of the DGKN and those enrolled in the IONM curriculum.

Each participant should bring a clinical case report (3 slides, 3-4 minutes speaking time) related to at least one of the discussion group topics. The cases will stimulate the discussions in the workshops and help introduce the participant's clinical focus.

The successful case presentation is subject to additional credit which will be included in the course evaluation. The course certificate will be attributed for successful participation in the hands-on trainings (component A), the case presentations in the context of the workshops (component B) and the e-exam, based on single choice questions (component C). The e-exam will take place within 2 weeks after the course. The exact date will be chosen based on the availability of the course participants.

## Networking Events

The participation in the networking events on Monday and Tuesday is voluntary. The additional fee of max. 40 EUR needs to be paid on-site directly to the course administration team and will be announced in the final programme.

- The times are Portuguese local time, i.e. CET (Berlin) +1h -

## Programme

### DAY 1 | Sunday, 15 March 2026

Time	Programme Item	Lecturer(s)	Moderation if necessary
From 10:30	Delivery and installation of devices possible (Pavillon)		
17:00	Departure bus transfer Lisbon Airport	Meeting point: Heineken Grand Café Departures Area, next to exit/entry	
approx. 19:40	Arrival of shuttle bus and reception at the Herdade da Urqueira		
19:50	Welcome with drinks and starters		
19:55	Welcome and introduction to the event	Szelényi, Weiss Lucas	
20:05	Reception		
20:15	History of neuromonitoring	Moll	
from 20:45	Dinner with discussion		
approx. 23:00	Shuttle bus to the Rupestre Hotel in Vila Velha de Ródão		

**DAY 2 | Monday, 16 March 2026**

Time Station	Programme Item	Lecturer(s)	Moderation if necessary
Until 08:00	Delivery and installation of devices possible (Pavillon)		
07:15	Shuttle Bus to Summer School venue leaving from Rupestre Hotel		
07:25	Breakfast at the Herdade		
08:00	<b>Talks Block 1</b> Spine		Seidel, Drost
08:10	Anesthesiological challenges in the management of spinal cord surgeries and injuries	Fiandeiro	
08:30	Recent advances in spinal cord and nerve root mapping (Double train)	Seidel	
09:00 - 12:00	<b>Hands-on Block 1</b> (4 rotations, change every 40 min)		
Station 1	Orthopedic interventions and anesthesiological aspects	Szelényi, Fiandeiro	
Station 2	Spinal cord mapping: traditional and advanced techniques	Seidel, Vergani	
10:20	Coffee Break		
Station 3	Spinal cord monitoring	Drost, Leote	
Station 4	Diagnostic and therapeutic value of nTMS/rTMS in spinal cord pathologies	Weiss Lucas, Lavrador	
12:00	Lunch		
13:00	<b>Talks Block 2</b> Lumbar roots and peripheral nerves		Szelényi, Nagi
13:00	Mapping and monitoring conus/cauda functions	Drost	
13:30	Case discussion: presurgical planning and intraoperative mapping & decision making for selective dorsal rhizotomy	Weiss Lucas, Campos	
13:40	Case discussion: Preoperative neurophysiology and neurosonography to evaluate nerve surgery indications	Nagi	
13:50	Discussion		
14:00 - 15:30	<b>Hands-on Block 2</b> (4 rotations, change every 30 min)		
Station 1	Mapping and monitoring of conus and cauda	Drost, Szelényi	
Station 2	Mapping lumbar and sacral roots for selective dorsal rhizotomy (SDR)	Weiss Lucas, Campos	
Station 3	Nerve: neurography and neurosonography	Nagi, Leote	
15:30 - 16:45	<b>1<sup>st</sup> Working Groups time slot</b> (case discussions) – <b>Spine &amp; nerves</b>		

16:45	Coffee Break	
17:00	<b>Brief introduction to clinical tractography</b>	Weiss Lucas, Forkel
17:10	Tractography workshop I – motor system How I do it & intraoperative integration	Forkel, Loução, Campos, Weiss Lucas, Lavrador, Vergani, Seidel
	<i>In parallel:</i> IONM and neurography/neurosonography troubleshooting	Szelényi, Drost, Leote, Nagi
18:15 - 19:30	<b>Networking Event  </b> Clinical-scientific sunset walk	
20:00	Pre-dinner talk: AI in clinical neurophysiology - potentials & challenges	Rampp, Seidel
20:30	Dinner with discussion	
~ 23:00	Shuttle bus to the Rupestre Hotel in Vila Velha de Ródão	

### DAY 3 | Tuesday, 17 March 2026

Time Station	Programme Item	Lecturer(s)	Moderation if necessary
07:10	Shuttle Bus to Summer School venue leaving from Rupestre Hotel		
07:20	Breakfast at the Herdade		
07:45	Haptic models in times of virtual reality: Agar agar meets the cow brain		Sabel (remote)
	<b>Talks Block 3</b> Cortical mapping/monitoring and epilepsy basics		Noachtar, Campos
08:00	Localisation and lateralisation of seizures – functional-anatomical insights from seizure semiology	Noachtar	
08:30	Determining the limits of resection in epilepsy surgery	Campos	
09:00	<b>Hands-on Block 3</b> (3 rotations, every 30 min)		
Station 1	Tumor sensorimotor I – cortical	Szelényi, Vergani, Seidel	
Station 2	Epilepsy surgery planning (focus: semiology, source localization, sEEG basics)	Noachtar, Rampp, Campos	
Station 3	Noninvasive sensorimotor mapping and neuromodulation	Lavrador, Loução, Weiss Lucas	
10:30	Coffee Break		
10:45	<b>Hands-on Block 4</b> (3 rotations, every 30 min)		
Station 1	Tumor sensorimotor II – subcortical and insula	Seidel, Giampiccolo	
Station 2	Vascular sensorimotor	Szelényi, Drost	

Station 3	DBS special techniques	Moll, Álvarez	
12:30	Lunch		
	<b>Talks Block 3</b>		Vergani, Weiss Lucas
13:30	Functional segmentation of the cognitive network using sEEG-based white matter stimulation	Giampiccolo	
14:00 – 16:00	<b>Hands-on Block 5</b> (4 rotations, every 30 min.) Tumor		
Station 1	Cognitive cortical mapping and monitoring in brain tumor surgery (awake)	Vergani, Szelényi (Weiss Lucas)	
Station 2	Subcortical mapping and monitoring (awake vs. asleep)	Seidel, Giampiccolo	
Station 3	Mapping and monitoring during resective epilepsy surgeries (focus: ECoG, awake)	Campos, Ramp	
Station 4	Noninvasive language/cognitive mapping	Lavrador, Loução, Weiss Lucas	
16:00	Coffee Break		
16:15	<b>Tractography workshop II</b> – cognition How I do it & intraoperative integration	Forkel, Loução, Campos, Weiss Lucas, Lavrador, Vergani, Seidel	
	<i>In parallel:</i> IONM and DBS troubleshooting	Szelényi, Drost, Leote, Moll	
17:30 -	Disassembly of devices (if early departure is necessary)		
17:30 - 19:30	<b>Networking Event</b>   Sightseeing trip with networking opportunity (optional)		
20:30	Neurosurgery / Neurophysiology is Cooking – Volume III	Moll	Weiss Lucas, Lavrador
20:45	Dinner with discussion and music		
~ 23:45	Shuttle bus to the Rupestre Hotel in Vila Velha de Ródão		

#### DAY 4 | Wednesday, 18 March 2026

Time	Programme Item	Case Presenter(s)	Moderation (demo device)
From 09:15	Disassembly of devices		
07:50	Shuttle bus to Summer School venue leaving from Rupestre Hotel		
08:00	Breakfast at the Herdade		
08:30	Vision		
08:45	<b>Working Groups</b> (case discussions) <b>2<sup>nd</sup> time block - brain mapping &amp; monitoring</b>		
	Topics, presenters and moderators to be adjusted based on submissions, e.g.		

	DBS		
	Asleep and awake tumour surgery - focus: perioperative mapping and batteries		
	Insular glioma surgery		
10:00	<b>Working Groups</b> (case discussions) <b>3<sup>rd</sup> time block - brain mapping &amp; monitoring</b>		
	Topics, presenters and moderators to be adjusted based on submissions, e.g.		
	Awake tumor surgery – focus: connectivity and CCEP		
	Epilepsy surgery: sEEG		
	Perioperative non-invasive neuromodulation		
11:15	Closing remarks and feedback	all	Szelényi, Weiss Lucas
11:30	Grab lunch box and check out		
11:45	Departure bus transfer to Lisbon Airport (arrival approx. 14:30)		

**Remote Exam** | [The date and time slot will be agreed with the participants on-site](#)

Time	Programme item
30 min.	The course will be followed by a <b>mandatory electronic multiple-choice test</b> via the eLearning Platform ILIAS. The test has to be completed within approximately 30 minutes during a flexible time frame along the day (9 am – 5 pm). The day will be chosen based on the availability of course participants (voting will follow). All further information regarding the examination will be provided at the Summer School.

## Preparation

International and external participants who have not been part of the DGKN (Basics) curriculum so far, will be provided with on-demand e-learning material approximately 6-8 weeks prior to the course. Participants who have completed the Basic Courses will gain access to the e-learning material likewise to repeat contents ahead of Summer School.

Part of the **introductory lectures** specific to the hands-on training topics will be available online only. Please make sure to **watch** them **prior to the course**. These contents will not be repeated.

The following contributions are mandatory to be viewed prior to the course, and will be provided online. The access data will be sent out to the registered participants until Feb 27:

<b>Preparation for MON afternoon</b>		
recorded talks available online; on demand.		
Selective dorsal rhizotomy in cerebral palsy Basic principles	Campos & Weiss Lucas	20'
Preoperative neurography and -sonography. in peripheral nerve surgery	Nagi	20'
Intraoperative neurography and neurosonography in peripheral nerve surgery	Pedro	20'
Tractography Basics	Loução	20'
<b>Preparation for TUE morning</b>		
recorded talks available online; on demand		
Functional and structural anatomy and reorganisation of the sensorimotor network	Vergani	20'
<b>Preparation for TUE afternoon</b>		
recorded talks available online; on demand		
Language network anatomy and structural connectivity analysis	Forkel	20'
NTMS language mapping	Lavrador	20'
Cortico-cortical potentials for asleep mapping/monitoring of the cognitive network	Seidel	20'

## Lecturers and \*Committee

Alexandre Campos | Lisbon  
Gea Drost | Groningen  
Carlos Fiandei | London  
Stephanie Forkel | Nijmegen  
Davide Giampiccolo | London  
José Lavrador | London  
João Leote | Lisbon  
Ricardo Loução | Cologne

Christian Moll | Hamburg  
Michael Nagi | Munich  
Soheyl Noachtar | Munich  
Stefan Rampp\* | Erlangen  
Kathleen Seidel\* | Bern  
Andrea Szelényi\* | Munich  
Francesco Vergani | London  
Carolin Weiss Lucas\* | Cologne

The ratio of lecturers to participants is expected to be 1:2.

Lecturers do not receive a fee but receive up to EUR 350 towards travel expenses and free board and lodging during the course or are exempt from the participation fee.

The group of presenters primarily consists of lecturers from the Basics courses, complemented by specially invited overview lectures.

## Transparency

The event costs are not co-financed by industry funds. The industry's contribution to the event consists solely of the provision of equipment free of charge.

## With the kind non-financial support of the following companies:

Brainlab/Nexstim & Dr. Langer, GE, Inomed, Nihon Kohden, Stryker. (subject to possible last-minute changes; all supporting companies will be acknowledged in the final programme, provided on-site.)

## Participation Fees

The participation fees below **include** the bus transfer from/to Lisbon Airport as well as the costs for **accommodation** (in double occupancy of twin-bedded rooms! Single rooms at extra costs upon request) **and full catering** (incl. drinks flat rate; excl. high-proof spirits and cocktails). In case of external accommodation (self-organized), a discount of 100 EUR will be applied. The travel (from home) to and from Lisbon airport must be organized independently and is not included in the fee.

	<b>Member DGKN/DGNC Early Bird</b>	<b>Member DGKN/DGNC Late Registration</b>	<b>Non-Member Early Bird</b>	<b>Non-Member Late Registration</b>
<b>non-medical staff*</b>	570 EUR	640 EUR	660 EUR	745 EUR
<b>medical assistants</b>	620 EUR	700 EUR	715 EUR	805 EUR
<b>specialist medical staff</b>	690 EUR	780 EUR	800 EUR	900 EUR

\* e.g. TA, students, scientists or medical staff with part-time employment and comparable income category (approx. TVL-9, 100%), e.g. on parental leave

The passive participation fee (e.g. for industry staff) is **350 EUR** and includes full catering (but not accommodation). External dinner participation (e.g. of family members) is generally possible upon request at the cost of 45 EUR per dinner, including drinks (hot and cold non-alcoholic drinks, beer, wine).

## Location

**Accommodation:** Hotel "**HERDADE DA URGUEIRA**" and Hotel "**RUPESTRE ARTS HOTEL RÓDÃO**" in Vila Velha de Ródão

At the conference venue, flats and rooms of various sizes are available. The flats are spacious and feature a terrace and kitchenette. *Due to limited on-site capacity, it is necessary for participants to share twin rooms.* Please note that the venue has been rented exclusively for the course.

Additional rooms have been pre-booked at "**RUPESTRE ARTS HOTEL RÓDÃO**", offering limited accommodation possibilities for family members and in single rooms (upon request).

**Catering: Hotel restaurant "Meio do Nada"**

The participation fee includes three dinners, two lunches, one lunch box and all coffee breaks as well as drinks (hot and cold non-alcoholic drinks, beer)