

GEOBONN 2018

Dear Members of the DMG,



Klaus D. Grevel

We are looking forward to the GeoBonn 2018 conference to be held 2–6 September 2018 at the University of Bonn (Germany). Under the theme “Living Earth”, more than 600 abstracts have been submitted and will be organized in several parallel sessions covering the whole range of disciplines in Earth and material sciences (www.geobonn2018.de/). The annual “Geo” meetings are the annual meetings of the the German Geological Society (DGGV, or Deutsche Geologische Gesellschaft – Geologische Vereinigung). In 2015 and 2017, the joint DMG–DGGV meetings took place, also named a “Geo” meeting. This year, the “Geo” meeting continues to expand. The Palaeontological Society, under the auspices of the DVGeo, will be joining the DMG and DGGV at GeoBonn. And, there will be a session for geophysicists as well. The “Geo” meetings tend to be hosted in a different city each year. This year it is Bonn’s turn.

The GeoBonn 2018 conference will offer all of us the opportunity to attend the talk by Christoph Burkhardt (University of Münster) who received the Victor Moritz Goldschmidt Award in 2016, and to congratulate this year’s awardees. The 2018 Abraham Gottlob Werner Medal, which is the highest award given by the DMG for outstanding original research, will go to Ulrich Bismayer (retired professor in crystallography at Hamburg University). Oliver Plümper (Utrecht University, The Netherlands) will receive the 2018 Victor Moritz Goldschmidt Award for his work on fluid–rock interaction and the deep-water cycle. Jessica Starke (University of Tübingen, Germany) will receive the Paul Ramdohr Award for the best oral student presentation at the GeoBremen 2017 meeting. Also, we pay tribute to our new honorary members: Walter Maresch (Ruhr-University Bochum, Germany) and Klaus Heide (Friedrich Schiller University Jena, Germany).

All DMG members are invited to attend our annual general assembly which will be held 3 September 2018 in Lecture Hall VII of the University Main Building at 6 PM. There will be a minor revision of our bylaws, which has to be approved by at least 3/4 of the members present. Several more important issues concerning our society will be discussed. The agenda of the meeting was published in the June issue of *GMIT* (www.gmit-online.de) (*GMIT* stands for *Geowissenschaftliche Mitteilungen*). Thus, if you would like to raise a certain topic or have any questions relevant to the society, please come along! Student members attending the general assembly can benefit from an additional travel support; the form can be downloaded from www.dmg-home.org/fileadmin/user_upload/Form-DMG-Travel-Grant-AnnualMeeting_v1.pdf. Furthermore, don’t hesitate to contact us for any other question relevant to the DMG – at GeoBonn 2018, the DMG will be continuously on hand at the DMG booth.

See you in Bonn!

Klaus-D. Grevel (DMG Secretary)



GEOBONN 2018

2–6 September 2018 | Bonn | Germany



Living Earth



Dr. Michael Fechtelkord and participants of the 18th nuclear magnetic resonance DMG short course (Institute for Geology, Mineralogy and Geophysics, Ruhr University Bochum, Germany)

SHORT COURSE REPORT

Applications of Solid State NMR Spectroscopy in Geosciences

Dr. Michael Fechtelkord, of the Institute for Geology, Mineralogy and Geophysics at the Ruhr-University Bochum, hosted the 18th DMG nuclear magnetic resonance (NMR) short course entitled Applications of Solid-State NMR Spectroscopy in Mineralogical and Geoscientific Research, which took place 22–25 May 2018. The widespread use and manifold applications of this technique attracted 13 participants from different scientific fields, including chemistry, mineralogy, solid-state physics, and material science. This complementary measurement method helps characterize of crystalline and amorphous materials with respect to their structure and dynamic processes. The four-day workshop, which was structured around a theory session in the morning and a practical session in the afternoon, offered the various masters and postgraduate students a comprehensive overview.

On the first day, the participants were introduced to the theoretical basics of NMR spectroscopy, the historical development of the technique, and the experimental setup of the BRUKER ASX 400 spectrometer at Bochum. The students initially determined the ¹H spin lattice relaxation and dynamics of tetramethylammonium iodide with rising temperature (298–430 K).

The second day emphasized magnetic dipole interactions, chemical shifts, and the magic angle spinning (MAS) method as a tool for measuring free impulse delays. In the afternoon, the ²⁹Si, ¹⁹F and ¹H MAS NMR spectra of synthetic phlogopite samples were recorded. Using a modified version of the freeware program DMT2010, the students’ recorded spectra were analysed. The chemical shift was experimentally demonstrated through the measurement and evaluation of ¹³C and ¹H NMR spectra.

The short course continued with Hahn’s Echo, an example of a multi-pulse technique used to create free impulse delays without pulse influence. Additionally, the so-called “incredible natural abundance double quantum transfer experiment” (INADEQUATE) was demonstrated. This is a method that can characterise adjacent tetrahedral sites. In the afternoon, a contact time-dependent cross polarisation magic angle spinning (CPMAS) experiment enabled the calculation of H–Si bond distances to be carried out.

The theory on the last day covered the atomic nuclei with a spin $I > \frac{1}{2}$. This type of quadrupolar interaction requires additional methods, such as multi-quantum magic angle spinning (MQMAS) and satellite transition spectroscopy (SATRAS). During the practical part of the afternoon, we measured ²³Na in Glauber’s salt (anhydrous sodium sulphate) using the MAS method. Furthermore, we performed a SATRAS measurement on ²⁷Al in corundum (aluminium oxide). In addition to the ²³Na experiment, a static deuterium and a ⁷Li NMR spectrum were evaluated.

Our warm thanks go to Dr. Fechtelkord for offering a broad overview of the possibilities of NMR spectroscopy for the geosciences, chemistry and materials science. His comprehensive and patient explanations, as well as a constant supply of coffee and tea, are gratefully acknowledged.

Mara Lönartz and Moritz Malott, (Bonn)

HONOURARY MEMBERS

In 2017, the general assembly nominated two deserving members as honorary members: **Klaus Heide** (Jena) and **Walter Maresch** (Bochum). Both will be honoured at this year's annual DMG meeting at GeoBonn 2018.

Klaus Heide

Klaus Heide (Institute for Geosciences, Friedrich Schiller University, Jena), was born 7 October 1938 and joined the DMG in 1960, one year before he finished his diploma studies. During difficult political times, he kept in close touch with the society and renewed his full membership in 1991.

Klaus Heide grew up in Jena, a city sometimes called the Thuringian "City of Light". At his hometown university he graduated in mineralogy with the thesis "Die Differential-Thermoanalyse und ihre Anwendung bei der Untersuchung von Salzmineralien" (Differential Thermal Analysis and its Application to Investigations of Salt Minerals). He obtained his PhD in 1964 and five years later completed his habilitation thesis "Struktur- und thermodynamische Untersuchungen an Lösungs-Kristall-Systemen" (Structural and Thermodynamic Investigations of Solid Solutions). Throughout his career, Klaus Heide continuously developed the fundamentals of thermal analysis methods; his book *Dynamische und thermische Analysenmethoden* (Dynamic and Thermal Analysis Methods) was published in two editions: one in 1979 and one in 1982.

In 1968, the German Democratic Republic (GDR) changed its academic system. Heide was forced to move from the Mineralogical Institute of Jena University to the Institute for Glass Chemistry at the Otto Schott Institute, Jena, where he worked from 1971 to 1992.

During this time, investigations on technical and natural glasses became a second focus of his work. He focused his research on the volatile contents and the degassing behaviour of glasses and of inorganic substances in general. Even biomineralization (including investigating kidney stones) and the weathering of black shales were topics tackled by Klaus Heide. Over his career, he published more than 200 papers. Furthermore, for several decades he was the dedicated and impassioned editor of one of the oldest and still going, geoscientific journal *Chemie der Erde / Geochemistry*.

Almost 25 years after the Mineralogical Institute of Jena University was closed by the GDR administration, the new Institute for Geosciences of Jena University was founded in 1992. Obviously, establishing a new program for geosciences is a huge task. In his function as the founding Professor of Mineralogical Sciences, Klaus Heide took on this strenuous and challenging task and pursued it with great passion until his retirement in 2004. He was also responsible for the university's mineralogical collection, which only survived the communist era due to his outstanding efforts. Today, he still shows up regularly at the university and actively supports the development of this collection.

During the 1990s, he was appointed a DFG (Deutsche Forschungsgemeinschaft, or German Research Foundation) referee for mineralogy and petrology. Thanks to his worldwide network, he was able to organize the "Natural Glasses" international meeting in March 1996. During his time as a chair of mineralogy, he and colleagues initiated the "Rent-a-Prof" program, where schools in Thuringia could invite professors to give talks on special topics. With great pleasure he presented all facets of "salt" and "natural glasses" to the young students. Klaus Heide is still interested in all kinds of mineralogical and geoscientific topics. His boundless enthusiasm is inspirational!

Birgit Kreher Hartmann (Jena), **Gert Klöß** (Leipzig)

Walter Maresch

Walter Maresch was born 1 July 1944 and grew up in Canada. After his BSc studies at the University of Toronto, where he graduated (with honours) for a thesis on pyrite growth mechanisms, he worked with one of the founding fathers of plate tectonics, Harry H. Hess (1906–1969), at Princeton University (USA) to obtain his MSc. In 1972, he finished his PhD with the highly acclaimed thesis "The Metamorphism and

Structure of Northeastern Margarita Island, Venezuela". Before completing his PhD, he returned to Germany and took office at the recently founded Institute for Mineralogy of the Ruhr-University Bochum in the group of experimental mineralogist and petrologist Werner Schreyer (1930–2006). During this time, he gained a reputation as an expert on amphiboles, publishing many papers on the subject. His habilitation thesis was on synthetic (Mn²⁺, Mg)-amphiboles. From 1988 to 1996, Walter Maresch was a professor for petrography and economic geology at Münster University before he returned to Bochum to take over the petrology chair from Werner Schreyer. Walter retired in 2009, which gave him more time to continue his work on phase relations in metamorphic rocks. In terms of field work, he is fond of the Caribbean, where, in 2015, he – together with Hans-Peter Schertl (Bochum) and colleagues from the U.S. and the Dominican Republic – organized the 11th International Eclogite Conference in Rio San Juan (Dominican Republic). Walter guided several conference field trips that year and did so with enormous pleasure.

In addition to his far-reaching scientific contributions, his tireless efforts for the mineralogical science in general must be mentioned.

For more than 20 years, Walter Maresch was editor and co-publisher of the *European Journal of Mineralogy (EJM)*. He contributed significantly to the foundation of this European journal. From 1991 to 1999, he was chief editor for the DMG. He was also member of the editorial board of the *Journal of Petrology* and, from 2007 on, he has been working for the Russian journal *Russian Geology and Geophysics*.

Many German students and amateurs know the book *Steinbachs Naturführer: Gesteine* (1987, written by W. Maresch and O. Medenbach) as an indispensable companion for field work. The 3rd edition of this book changed the title to *Gesteine: Systematik, Bestimmung, Entstehung* (Rocks: Systematics, Formation and Identification) and was authored by W. Maresch, H.-P. Schertl and O. Medenbach, and published in 2016 by Schweizerbart (Stuttgart, Germany).

During his term as president and vice-president of the DMG (1999–2003), he and Friedrich Seifert (Bayreuth) established a complete reorganization (four sections) of the society and initiated the DMG short courses and the new DMG logo. He also managed to find a place for the documents of the 100-year history of the DMG within the archives of the Berlin-Brandenburgische Akademie der Wissenschaften in Berlin.

From 2005 to 2010, Walter Maresch was council member of the International Mineralogical Association (IMA); between 2010 and 2016 he was board member; and between 2012 and 2014 he served as IMA President.

Walter's merits have been internationally recognized many times. He is a Fellow of the Mineralogical Society of America and the Geological Society of America, honorary member of the Russian Mineralogical Society, and Emeritus Fellow of the Mineralogical Society of Great Britain and Ireland. In awarding him its honorary membership, the DMG now recognizes his outstanding contributions to mineralogy. We are delighted that his contributions are now fully acknowledged by his "home society".

Klaus-D. Grevel (Jena)