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## Andrija Mohorovičić – the great Croatian Scientist

Invited lecture on the occasion of the 150<sup>th</sup> anniversary of his birth presented during the Assembly of the Croatian Academy of Engineering (HATZ) at its 22<sup>nd</sup> meeting held on March 09, 2007.

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Andrija Mohorovičić, geophysicist of the world renown and one of the greatest Croatian scientists of all times, was born 150 years ago, on 23 January 1857 in Volosko near Rijeka, Croatia. In 1875 he enrolled into the Prague University to study mathematics and physics. After graduation, he taught at high schools in Zagreb and Osijek, and on the Nautical School in Bakar. In the year 1892 he became director of the Meteorological Observatory in Zagreb. The following year Mohorovičić obtained the doctorate of philosophy at the Zagreb University, where he was later elected a titular associate university professor to teach courses on geophysics and astronomy. He became

the corresponding member of the Academy in 1893, and the full member in 1898. Mohorovičić retired in 1922.

In the beginning of his career, Mohorovičić is engaged in meteorology. His scientific interests lay in the explanation of various meteorological phenomena – atmospheric dynamics and observations of rare events (tornado near Novska, whirlwind near Čazma). He also studied the climate of Zagreb, and the decay of temperature with height. As only recently re-discovered, Mohorovičić was probably the first to describe atmospheric rotors with the horizontal axis, which he observed during bora-wind episodes at the northern Adriatic. Mohorovičić is also recognized for the unification of the meteorological service in Croatia and Slavonia, and was the first in Croatia to publish weather forecasts in daily papers.

About the turn of the centuries Mohorovičić's scientific interest turned almost exclusively to seismology. The meticulous analyses of the seismograms of the Kupa Valley earthquake of 8 October 1909 enabled him to prove the existence of the crust-mantle boundary, which later became known as the Mohorovičić discontinuity. This unveiling of one of the big secrets of the deep Earth's interior places him among the founding fathers of the modern seismology. The discovery – recognized as one of the milestones of science in the beginning of the 20<sup>th</sup> century – is also the *most important scientific contribution ever published in a Croatian journal*. He founded the Zagreb seismological station in 1906 and equipped it with the best instruments of the time, thus placing it on the level with the most excellent observatories in the world.

Andrija Mohorovičić was a very careful, pedantic and diligent scientist, who enjoyed to search for explanations of observations in theory, but never favoured theory over observations. He published about 45 papers, of which he was always the only

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author. This speaks not of his vanity, but rather of hard conditions he had to work in, resulting in a persistent shortage of co-workers. As an exceptional organizer, he is today recognized as the founder of the Zagreb seismological school, the Croatian seismological and meteorological surveys, and of the public time service. Owing to the tradition he initiated, University of Zagreb is among the few in the world awarding a degree in seismology on the undergraduate level. His thoughts and ideas were truly visionary, often decades before his time (harvesting the wind energy, hail suppression, models of the Earth and atmosphere, deep earthquakes, earthquake-resistant building design...). In

1970 one of the craters on the dark side of the Moon was named after him, as was the asteroid No. 8422 in 1996. Since recently, the crust-mantle boundary on the Moon as well as on the Mars is also known as the Mohorovičić discontinuity.

*Andrija Mohorovičić, as only very few Croatian scientists of the international reputation ever, made his whole career in his homeland. He is undoubtedly one of the greatest Croatian scientists ever, and the world geophysical community considers him as one of the great men of seismology of the 20<sup>th</sup> century.*

## New Members of HATZ

At the 22<sup>nd</sup> Annual (Elective) Assembly of the Croatian Academy of Engineering held on March 9, 2007 following members were elected or promoted:

### Honorary Members:

- Prof. Dragan Primorac, Ph.D.;
- Prof. Kemo Sokolija, Ph.D. (Republic of Bosnia and Herzegovina).

### Correspondent Members:

- Prof. Melita Ahić-Đokić, Ph.D. (Republic of Bosnia and Herzegovina);
- Prof. Pavol Podhradsky (Slovakia).

### Members Amici:

- Prof. Damir Boras, Ph.D.;
- Assist. Prof. Alfredo Višković, Ph.D.

### Department of Systems and Cybernetics:

- Prof. Bojan Jerbić, Ph.D. – Collaborating Member.

### Department of Information Systems:

- Prof. Vedran Mornar, Ph.D. – Full Member;
- Prof. Mario Kovač, Ph.D. – Associate Member;
- Prof. Krešimir Fertalj, Ph.D. and Hrvoje Mlinarić, Ph.D., Senior Assistant – Collaborating Members.

### Department of Communication Systems:

- Prof. Sonja Grgić, Ph.D. – Associate Member;
- Assist. Prof. Winton Afrić, Ph.D. – Collaborating Member.

### Department of Power Systems:

- Assist. Prof. Goran Granić, Ph.D. – Associate Member.

### Department of Transport:

- Prof. Mario Anžek, Ph.D. – Collaborating Member.

### Department of Mechanical Engineering and Naval Architecture:

- Prof. Zdravko Virag, Ph.D. – Full Member.

### Department of Electrical Engineering and Electronics:

- Prof. Zdravko Valter, Ph.D. and Prof. Zdravko Hebel, Ph.D. – Full Members;
- Prof. Sead Berberović, Ph.D. – Associate Member;
- Prof. Ivica Pavić, Ph.D. – Collaborating Member.

### Department of Bioprocess Engineering:

- Prof. Jagoda Šušćković, Ph.D. – Associate Member.

### Department of Mining and Metallurgy:

- Prof. Ante Markotić, Ph.D. – Full Member.

### Department of Textile Technology:

- Prof. Zvonko Dragičević, Ph.D. and Prof. Darko Ujević, Ph.D. – Collaborating Members.