

## **Koya Suto, *Terra Australis Geophysics*, Brisbane (Australia)**

- **A Hitchhiker's Guide to Geophysics**
- **Near-Surface Geophysics: Geophysics for human life, Geophysics in the life of a human**

### **Biography:**



**Koya Suto** received bachelor's and master's degrees in exploration geophysics from *Mining College, Akita University*, and studied further at the *University of Adelaide*. Born in Japan, Suto first studied gravity, airborne magnetics, and radiometrics for geologic mapping and mineral exploration. He worked for the petroleum industry as a seismic geophysicist for 25 years.

Koya started *Terra Australis Geophysics* in 2003 to service the civil engineering and environmental industries with near-surface geophysical surveys using the surface wave seismic (MASW) method. Since then, he has presented a number of case histories of MASW surveys in international conferences.

He served as a Federal Executive of the *Australian Society of Exploration Geophysicists (ASEG)* for more than 20 years including as president in 2013–14. Through his involvement in *ASEG* and its international associates, he was awarded a *Service Certificate* from *ASEG* and *Recognition of Merit* from the *Society of Exploration Geophysicists of Japan*. Koya also was awarded an *Honorary Membership of ASEG* in 2010, an *Honorary Membership of the Association of Geoscientists and Environmentalists of Serbia (AGES)* in 2015, and the *Harold Mooney Award* from the *SEG Near Surface Technical Section* in 2015.

Suto translated *The Microtremor Survey Method* by Prof Okada, published in 2003 by *SEG*, and *Application Manual of Geophysical Methods to Engineering and Environmental Problems* published in 2014 by *EAGE*.

Koya has served on the *SEG Global Affairs Committee* since 2005, and was chairman in 2014. He was *SEG 2017 Honorary Lecturer - Pacific South*, giving the lecture at 22 universities in Pacific South region (Indonesia, Malaysia, Thailand, New Zealand, Taiwan, Korea, Japan, New Guinea, Australia).

## Lectures:

### ➤ **A Hitchhiker's Guide to Geophysics**

We live in the 21st century. The satellites cruising around the earth help our daily communication. The spacecrafts travel interplanetary space to collect information. Radio telescopes watch birth and death of stars. We try to understand what happened in the galaxies millions of light years away. Yet we cannot see what is behind the wall next to us or what is under our feet.

Geophysics is a tool to “see” the invisible. Any physical phenomenon provides hints to geophysics: vibration, sound, mass, electric and magnetic properties, heat, radiation, and cosmic rays as much as our imagination could lead us. With a clear understanding of the phenomenon, we can predict what is in the invisible space. With appropriate instrumentation, we can prove it. With the wildest imagination, we can develop ways to “see the invisible.” Geophysicists study the natural phenomena to understand the system. Some geophysicists design instruments right for observing the phenomena and some geophysicists interpret the data to “see” the invisible. Geophysics is a fun subject. It offers you a lot of challenge and a lot of reward.

This presentation guides you around the fascinating world of geophysics.

### ➤ **Near-Surface Geophysics: Geophysics for human life, Geophysics in the life of a human**

Geophysics covers a broad spectrum of physics of earth by varying scale and corresponding applications: for scientific knowledge (solid earth geophysics, for example), for economic interest (exploration geophysics) and for wellness of human community (engineering geophysics).

When I left the exploration industry, I learnt the near-surface geophysics, particularly in the MASW method. In its application, I found a different aspect of application of geophysics: geophysics directly related to wellbeing of human life. We meet the people who benefit from our geophysical surveys face-to-face. This is a pleasure that I never encounter in the resource exploration, and changed my approach to the human community.

This presentation shows some of the projects I was involved in using the MASW method to improve people's quality of life. These include a dam survey in Solomon Islands and a Geoscience *without* Borders project in Serbia and Bosnia and Herzegovina. At the same time, I present how I enjoy near-surface geophysics in my life.

A part of this presentation was given as a commemorative speech at the award ceremony of Harold Mooney Award of SEG's Near-Surface Technical Section in New Orleans, October 2015. It shows my life story with case histories of two humanitarian projects.