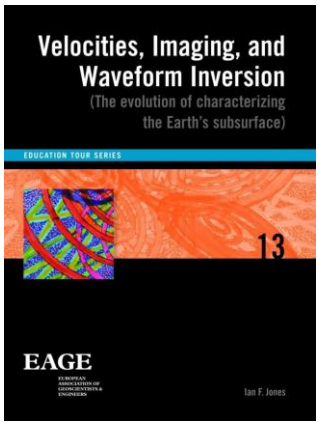
2019 年 11 月

EAGE Education Tour 13 (EET13) 開催のご案内

(公社)物理探査学会
国際委員会



European Association of Geoscientists & Engineers (EAGE)の主催する教育プログラム EAGE Education Tour (EET) が東京で開催されることとなりました。 このプログラムは、EAGE の著名な講師が世界各地において、最新の技術トピックスについての講義を行うものです。 今回の講義では、弾性波探査データを用いた地下の物性値の推定について、実用的な側面からの解説を聞くことができます（詳しくはこちら)。実務に携わる物理探査技術者にとって大変有意義な講義と思われます。関心のある方は奮ってご参加ください。

記

テ ー マ：Velocities, Imaging, and Waveform Inversion - The Evolution of Characterizing the Earth's Subsurface
講　　師：Ian Jones (ION, UK)
日　　時：2019 年 12 月 11 日（水）9:30 - 18:00
会　　場：国際石油開発帝石株式会社　セミナールーム
赤坂 Biz タワー36 階
※参加申込をされた方には入館に関する案内を別途お送りします。
申込方法：EAGE のサイトからお申し込みください。
受 講 料：

	一般	学生
EAGE 会員	75 ユーロ	50 ユーロ
EAGE 非会員	150 ユーロ	125 ユーロ

※非会員料金には EAGE の年会費 (2020 年分) が含まれます。詳しくは EAGE のサイトをご覧ください。
申込締切：2019 年 11 月 29 日

ご不明な点は学会事務局までお問い合わせください。

公益社団法人　物理探査学会
電話：03-6804-7500、電子メール：office@segj.org

以上

Course description

Ian Jones' two-day course 'An introduction to migration and velocity model building' covers much of the ground that this EET will cover, as does Etienne Robein's EET 4 course on imaging, Tariq Alkhalifah's EET10 course and Jean Virieux' SEG DL course on FWI. However, this new EET will be a fusion of the practical industrial elements of the above courses, concentrating on the origin and nature of the geological complexities that give-rise to imaging problems, as well as a physical (rather than mathematical) understanding of subsurface parameter estimation, and will also look at some possible future directions.

The course is designed for: practising geoscientists who desire to better understand the principles and limitations of both current and emerging technologies involved in subsurface parameter estimation and imaging, and geoscience students. Following this course, participants should ideally understand how contemporary velocity estimation methods work, and what approximations are involved in obtaining computationally tractable solutions.

In using sound waves to characterize the Earth's subsurface, we can employ ray-theory and/or wave-theory, and both migration algorithms and parameter estimation schemes employ one or other of these theoretical descriptions. In this course, we'll review the evolution of the industry's approaches to building earth models via velocity estimation and imaging, outlining the evolution from ray tomography to full waveform inversion, and look towards the emerging possibilities for replacing imaging techniques with direct subsurface parameter inversion methods.

The approach will be mostly non-mathematical, concentrating on an intuitive understanding of the principles, demonstrating them via case histories, and will be divided into the following sections:

- dealing with the near surface
- the effects of strong vertical velocity contrasts
- the effects of strong lateral velocity contrasts
- waves versus rays
- model building using ray methods (tomography)
- model building using wavefield extrapolation methods (FWI)
- data examples and comparisons
- future developments

The first three sections outline the nature of the problems we face when building images representing subsurface impedance contrasts, and the next three deal with the technology we deploy to address the problems. In addition, I've included three appendices to outline: the historical development of model building; anisotropy; and pre-processing considerations for complex imaging. Several of the individual chapters build on a series of recent tutorial papers which I published in First Break. However, only the key points from these tutorial papers are included, so I refer readers to the original papers for more detail and/or a range of real data examples for each of their topics.

Due to space and time constraints in the EET format, Ian Jones had to omit or limit coverage of various topics, including: migration of multiples, Marchenko and inverse scattering series migration, joint migration-inversion, least-squares migration, and uncertainty estimation.