

# Preface

Young students in universities and freshers in oil companies have asked me on many occasions after my lectures, if I could suggest a reference book on interpretation and evaluation of seismic data. I could not do so because, honestly, I was not aware of any such book. Interpretation, being an aspective art, depends to a large extent on an individual's perception and, perhaps due to this reason, it becomes difficult for one to express abstract things in writing.

Interpretation of any data, especially seismic data in petroleum exploration, needs to be conclusive and logically extended to its geological implications, in evaluating the prospects for techno-economical risk analysis, and consequently in strategizing field development plans for exploration and production of hydrocarbons. There is a difference between interpretation of data and its evaluation, which needs emphasis. For example, detecting and mapping a fault is not an end of an interpretation in itself. It is essential for the interpreter to evaluate its significance in terms of its role in source and reservoir potentials, in trapping and migration mechanisms, and ultimately for accumulation and production of hydrocarbons.

This guide is for practioners, students as well as geoscientists and engineers in the industry in the field of seismic data interpretation and more significantly for data evaluation. It is assumed that the young professionals are well acquainted with the elementary theory, principles and the equations in their respective disciplines of geology and geophysics taught in schools, and as such these preliminaries are mostly kept to the bare minimal. However, as it is essential for a seismic analyst to be familiar with certain relevant geophysical, geological and reservoir engineering principles for a holistic interpretation and evaluation of multidisciplinary data, some of the basics are restated very briefly and in a simple way in the book for expediency.

This guide is principally an expanded and enlarged version of my lecture and training notes to post-graduate students of Petroleum Geology and Geophysics and young professionals in oil companies. A caveat that may appropriately be stated here is that the handbook reflects a flavor of many of my personal perceptions and idealistic thoughts, sieved out of many decades of my practicing experiences in

petroleum exploration and development. It is an attempt to encourage and steer young analysts to become more imaginative, logical, and practical in application of their knowledge to achieve the goals.

Ultimately, it aims to motivate and facilitate the practitioners in the art of seismic data interpretation and evaluation and to gain proficiency in a shorter span of time, an objective often sought by E&P companies in the industry. It is hoped that this handbook provides enough stimuli to the inquisitive and sharp minds of the young geoscientists and engineers, compelling them to continue thinking and questioning followed by offering rejoinders, and in the process excel in their profession.

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