Werk

Jahr: 1981
Kollektion: fid.geo
Signatur: 8 Z NAT 2148:50
Digitalisiert: Niedersächsische Staats- und Universitätsbibliothek Göttingen
Werk Id: PPN1015067948_0050
PURL: http://resolver.sub.uni-goettingen.de/purl?PPN1015067948_0050

LOG Id: LOG_0033
LOG Titel: Book review
LOG Typ: section

Übergeordnetes Werk

Werk Id: PPN1015067948
PURL: http://resolver.sub.uni-goettingen.de/purl?PPN1015067948
OPAC: http://opac.sub.uni-goettingen.de/DB=1/PPN?PPN=1015067948

Book Review

Applied Inverse Problems, edited by P.C. Sabatier. Lecture Notes in
Physics 85, 425 S., Springer, Berlin Heidelberg New York, 1978

The book evolved from a workshop on applied inversion problems orga-
nized by the CNRS in Montpellier 1978. The lecture notes deal with
quite different aspects of applied inverse problems in various scientifique
fields, whenever a number of local parameters of a physical system
must be deduced from a set of measured data such as geophysics, optics,
quantum mechanics, particle field theory.

After an introduction to general aspects of inverse theory and an
overview of the methods of inversion and its fields of application about
20 lecture notes on applied but as well on theoretical inverse problems
are reprinted. 6 of them deal with geophysical applications in seismology,
gravity, magnetotelluric and electromagnetic prospection. These include
mostly linear inversion methods, the properties of which are fairly well
understood up to now but nonlinear aspects are treated as well, i.e.,
the determination of seismic foci and of the electric conductivity. As
the lectures are given by authors working in the respective fields, they
are highly specified. The same is true for the useful understanding of
the other lectures mostly treating scattering problems in quantum me-
chanics and particle field theory. Finally some lectures deal with the
mathematical aspects of inverse theory (e.g., the search for solutions
of integral and differential equations arising mainly in these fields outside
geophysics).

In conclusion, I can say that the book gives a good overview of
applied (and theoretical) inverse problems for the scientist working in
one of these fields and who is willing to overclimb the high mathematical
cliffs which encompass this rather new research field. For the geophysicist
who wants to know something about inversion there are a number
of publications treating this problem at a lower and maybe more under-
standable level, lots of them are referenced in this book. Some of the
geophysical lectures given here are already published elsewhere so that
the geophysicist who wants to do inversion does not get much additional
information from this book.   **Manfred Koch**