ing on a sphere. We developed this technique to help us analyze patterns of propagating rifts, a recently discovered plate tectonic process where new oceanic ridges occasionally break through plates, growing gradually longer along strike. These patterns show dynamically changing patterns of magnetic anomaly and bathymetric offsets (pull-apart faults) as well as failed rifts.

We are applying this forward modelling technique to new oceanic ridges, from the Galapagos to the Juan de Fuca plate, and have also added to the understanding of the Galapagos-Farallon spreading center. This work demonstrates that the Galapagos-Farallon spreading center is part of a larger basin, where the crustal stresses and resulting rift segments are seen to be dominantly right-lateral (spreading rifts) and the Pacific-Juan de Fuca relative plate motion results in a step increase in local ridge length of about 6.5 km. This is consistent with a model of the Juan de Fuca plate motion.

The sections show that the oceanic crust is formed by a combination of processes, including ridge-push, transform faulting, and subduction. The crustal structure is characterized by a complex interplay of magma production and plate interaction. The oceanic crust is shown to be composed of two main components: the ridge-crest and the transform sections. The ridge-crest sections show a distinct pattern of magnetic anomalies, indicating the presence of distinct spreading systems. The transform sections, on the other hand, show a more complex pattern of magnetic anomalies, indicating the presence of a mix of spreading and transform systems.

The overall picture is a complex interplay of processes, with ridge-crest systems forming in the setting of spreading ridges, and transform systems forming in the setting of transform faults. The overall pattern shows a complex interplay of processes, with ridge-crest systems forming in the setting of spreading ridges, and transform systems forming in the setting of transform faults. The overall pattern shows a complex interplay of processes, with ridge-crest systems forming in the setting of spreading ridges, and transform systems forming in the setting of transform faults. The overall pattern shows a complex interplay of processes, with ridge-crest systems forming in the setting of spreading ridges, and transform systems forming in the setting of transform faults. The overall pattern shows a complex interplay of processes, with ridge-crest systems forming in the setting of spreading ridges, and transform systems forming in the setting of transform faults. 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The ocean floor data consist of nine east-west lines covering the ridge from the Norway Basin to the Iceland Plateau, and from the Jan-Mayen Island in the north to the Trench in the south. In the northern and eastern parts of the ridge the sequence of horizontal segments of the oceanic crust are dip-slip and conform with acoustic basement. The west the sedimentary sequences are blockfaulted and form an escarpment bordering the basin west of the ridge. Further south the sedimentary basins are flatter. South of the bathymetric depression at 85øN the eastern part is faulted, and the ridge is divided into different ridges, as described in earlier papers. We will present an interpretation of the B-22 and CDP in the northern and southern extensions of the Jan-Mayen Basin based on this new set data and earlier published data covering the ridge.

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T 36

BEHAVIOR OF THE GRIJNESEEN PARAMETERS AND OF THE THEORETICAL THERMOPHYSICAL CHANGES

Michelene C, Hasbrouck (Sedimentology Laboratory, Virginia Polytechnic Institute and State University, Blacksburg, Va 24061)

Theories and measurements demonstrate that anomalous diffusivity (e.g., the Grijneisen parameter, thermal expansion, termal resistivity) decrease with increasing pressure, although the compression of solids continues. Continuum (Ishinau et al., 1978) models predict that the damping properties should also decrease across a phase transition with a density increase; however, experimental data on materials transforming at high pressures with an increase in coordination number contradict this prediction. We present results from a model based on interatomic potentials which correctly predicts the increase in density of simple compounds transforming from 6-8 to 8-4 coordinated structures, whereas the experimental data for the 8-4 phase transformation curve satisfy the available data for several alkali halides.

Example: Thermal Conductivity

\[ \text{Watt} = \frac{\text{Joules}}{\text{Second}} \]

\[ \text{Conductivity} = \frac{\text{Watt}}{\text{Pressure} \times \text{Area}} \]

KCI (B1) 2.03
KCl (B2) 2.03
NaCl (B1) 2.03

\[ \text{KCI (B1)} \times \text{KCl (B2)} \times \text{NaCl (B1)} \]

T 35

57Fe-Mascherauer and x-ray diffraction data indicate the occurrence of a second-order transition between hightemperature and low-temperature phases in manganese. The transition temperature is about 50 K, but cannot be determinated exactly. Under increasing pressure, the transition energy decreases and the structure transforms to a high-temperature phase, which is characterized by a larger unit cell. This transition is also observed in other cuprate superconductors, such as YBa\(_2\)Cu\(_3\)O\(_y\) and Bi\(_2\)Sr\(_2\)Ca\(_2\)Cu\(_3\)O\(_y\) systems.


T 38

THE (3-1) TRIPLE POINT OF IRON AND THE EARTH'S INNER CORE

J.M. Brown (Department of Geophysics, Texas A&M University, College Station, TX 77843)

Discontinuities in elastic wave velocities along the earth's surface are interpreted as resulting from phase transitions. A phase diagram for iron based on both shock wave and low pressure data suggests that the (3-1) triple point for iron occurs at a pressure near that found at the earth's inner-core boundary. This may have important implications for the Earth's inner core, including the possibility of a second magnetic domain.
1980 AGU FALL MEETING
Section Luncheons

Geodesy  Tuesday, December 9  12 noon
Cas de Cristal
1122 Post Street

Hydrology  Wednesday, December 10  11:50
Cas de Cristal

Oceanography  Tuesday, December 9  12:15
Nikko Sukiyaki
Van Ness and Pine

Seismology  Tuesday, December 9  11:30
‘1906 Drinking Establishment’
Holiday Inn, Golden Gateway

Solar-Planetary  Wednesday, December 10  11:45
Relationships  Nikko Sukiyaki

Space is limited—reserve early! All luncheons—$7.50.
See page 928.

Article
Water Resources of the People’s Republic of China—N. C. Matalas

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Cover. The aurora, displayed in multiple bands and photographed near Fairbanks, Alaska, by Malcolm Lockwood. This is a reproduction of a color plate from Majestic Lights—The Aurora in Science, History and the Arts, by Robert H. Ether. This book is AGU’s most recent release.