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=====
=          DEEP SEA DRILLING PROJECT          =
=    ALTERNATING FIELD DEMAGNETIZATION    =
=    SEDIMENT PALEOMAGNETICS DATA FILE    =
=====
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I. INTRODUCTION

A. BACKGROUND

The alternating field demagnetization file contains alternating demagnetization data on the sediments. The purpose of alternating field demagnetization is to remove soft magnetization acquired since the sediments were deposited. Often, this means removal of magnetization acquired during the present Brunhes Normal epoch. Pilot demagnetizations are usually carried out on a few samples to determine how strong a field is required to produce stable directions of magnetization. Once the optimum demagnetizing field has been determined, all of the samples are demagnetized in that field.

Data were encoded primarily from the shipboard "Hole Summary Book", the DSDP data archives and the "Initial Reports of the Deep Sea Drilling Project". The file contains both shipboard measurements and measurements made at onshore laboratories. Shipboard paleomagnetic apparatus included a Digico balanced fluxgate spinner magnetometer and a Schonstedt alternating field GSD-1 demagnetizer.

Paleomagnetic measurements contained in this file are from core samples recovered by the punch core-rotary drilling and the hydraulic piston coring methods. Each logical record contains a code for the coring method.

B. METHODS

Magnetic properties recovered in this file include magnetic intensity, declination and inclination. The normalized intensity, a measure of magnetic stability, is included when available.

In many cases only one set of alternating field demagnetization results was reported for the sample. Fields in the data record of the Natural Remanent Magnetization - Sediment Paleomagnetism Data File have been reserved for these results.

In some cases thermal rather than alternating field

demagnetization was used. Information about the heat demagnetization was stored in the comments field.

The following quote concerning data reliability is taken from the Hole Summary Book paleomagnetism section for Leg 79, "It is important to mention here a crucial limitation of the shipboard magnetometer. Magnetization intensity values are often not repeatable and can fluctuate by up to 50% for samples with intensities one order of magnitude above noise level...Magnetization directions are generally repeatable."

Each record includes an identifying code for the analysts' or first author's name. See Table 1 for the index to analysts' codes.

A blank field means not determined.

Magnetic intensities are expressed in emu/cm³ in this file. In a few later DSDP reports data were expressed in SI units. The DSDP encoders converted these to CGS units. The following conversion was used: (A/m) X 10⁻³ = emu/cm³.

C. LEGS IN DATA SET

The data set contains data from Legs 4, 7, 17, 23, 27, 33-34, 41-42, 47-49, 51-52, 59, 66, 72-73, 79, 81-82, 84, 86, and 90.

D. BIBLIOGRAPHY

Partial references to analytical methods for shipboard measurements

Barker, P. F. and R. L. Carlson. 1980. Hole Summary Book for Leg 72. Paleomagnetists: N. Hamilton and A. Suzyumov.

Hsu, K. J. and J. L. La Brecque. 1980. Hole Summary Book for Leg 73. Paleomagnetists: J. L. La Brecque, N. P. Petersen, L. Tauxe, and P. Tucker.

Hinz, K. and E. L. Winterer. 1981. Hole Summary Book for Leg 79. Paleomagnetist: J. E. T. Channell.

For methods used in a shore-based study, consult the paper in the Initial Reports. The results and analytical information of shipboard analyses similarly are published in the Initial Reports and the Hole Summary Book. See Table 1 for the index to analysts' codes.

II. FORMAT, FIELD DESCRIPTIONS, AND CODES

A. RECORD FORMATS

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 = LEAD RECORD =
 =====

Record length = 60 characters

COLUMN	FIELD	FORMAT
=====	=====	=====
1-2	LEG	A2
3-5	SITE	A3
6	HOLE	A1
7-9	CORE	A3
10-11	SECTION	A2
12-15	TOP INTERVAL DEPTH (centimeters)	F4.1
16-19	BOTTOM INTERVAL DEPTH (centimeters)	F4.1
20-27	TOP OF CORE DEPTH (meters)	F8.2
28-35	SAMPLE MIDPOINT DEPTH (meters)	F8.2
36	unused	
37	CORING DEVICE CODE	A1
38-39	unused	
40-43	ANALYST CODE	A4
44	unused	
45-46	NUMBER OF PHYSICAL RECORDS	I2
47-58	unused	
59-60	PHYSICAL RECORD NUMBER	I2

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 = ALTERNATING FIELD DEMAGNETIZATION RECORD =
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Record length = 60 characters

COLUMN	FIELD	FORMAT
=====	=====	=====
1	REPEAT COLUMN	I1
2	unused	
3	MAGNETIC INTENSITY EXPONENT	I1
4-7	ALTERNATING FIELD DEMAGNETIZATION	A4
8-15	MAGNETIC INTENSITY	F8.0
16-23	J(H)/J ₀	F8.0
24-31	DECLINATION	F8.0
32-39	INCLINATION	F8.0
40-55	COMMENTS	A16
56-58	unused	

B. FIELD DESCRIPTIONS AND CODES

The definition of leg, site, hole, core and section may be found in the explanatory notes. In addition, the special core designations, as well as the methods of sample labeling and calculating absolute sample depths are discussed.

INTERVAL DEPTH:

Refers to the depth in centimeters within the section at which the rock was sampled. Values are encoded with an implicit decimal point.

TOP OF CORE DEPTH:

The subbottom depth in meters to the top of the core.

SAMPLE MIDPOINT DEPTH:

The subbottom depth in meters to the level at which the core was sampled.

CORING DEVICE CODE:

H = Hydraulic Piston Corer
(includes Variable Length Piston Corer)
R = Conventional Rotary Drilling Corer
(includes Extended Core Barrel)

ANALYST CODE:

TABLE 1 - ANALYSTS'/AUTHORS' CODES

"IR" = Initial Reports of the Deep Sea Drilling Project

"HSB" = Hole Summary Book

"ARCH" = Data Archives of the Deep Sea Drilling Project

LEG	CODE	ANALYST/AUTHOR	SHIP	ONSHORE	DATA SOURCE
===	====	=====	====	=====	=====
4	OP	Opdyke, N. D.		X	IR
7	SCLA	Sclater, J. G.		X	IR
17	JARR	Jarrard, R. D.		X	IR
23	HAM	Hamilton, N.		X	IR
27	JARR	Jarrard, R. D.		X	IR
	BREC	Brecher, A.		X	IR
33	JARR	Jarrard, R. D.		X	IR
34	JOH	Johnson, H. P.	X	X	IR
41	KENT	Kent, D. V.		X	IR
	HAWO	Hailwood, E. A.		X	IR
42	HAWO	Hailwood, E. A.		X	IR
47	HAM	Hamilton, N.	X	X	IR
48	HAWO	Hailwood, E. A.	X	X	IR
49	STR	Steiner, M.	X		HSB
51	BLEI	Bleil, U.	X		HSB
	KELT	Kelts, K.		X	IR
52	LV	Levi, S.	X		HSB
59	KEA	Keating, B.	X	X	IR
66	NM	Niitsuma, N.	X		IR
72	HAM	Hamilton, N.	X		HSB
73	PET	Petersen, N.	X		ARCH
79	CNL	Channell, J.	X		HSB
81	KRMK	Krumsiek, K.	X		ARCH
82	KHAN	Khan, M.	X		HSB
84	LIE	Lienert, B.	X		HSB
86	LV	Levi, S.		X	IR
90	BRTN	Barton, C.	X		HSB, ARCH

NUMBER OF PHYSICAL RECORDS:

The total number of physical records which together
comprise a complete set of AFD measurements for a sample.

PHYSICAL RECORD NUMBER:

Each physical record number in the AFD set is numbered sequentially in columns 59-60.

REPEAT COLUMN:

DSDP AFD Sediment Paleomagnetism 4/87

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The paleomagnetist occasionally repeated demagnetization steps on a sample. Column 1 has been reserved to indicate repeat status. A "0" was entered in column 1 if there was only one measurement for an interval. There is a "1" for the first repeat measurement, a "2" for the next repeat and so on. AFD results belonging to a single sample with the same number in the repeat column are from the same measurement sequence.

MAGNETIC INTENSITY EXPONENT:

In this file magnetic intensity is recorded in scientific notation. Each magnetic intensity value should be multiplied by 10 to the negative value of the number in column 3.

ALTERNATING FIELD DEMAGNETIZATION:

Demagnetizing force in oersteds. "NRM" was entered in this field when the demagnetizing field is zero. In some cases thermal demagnetization was used. Information about heat demagnetization was stored in the comment field.

MAGNETIC INTENSITY:

Expressed here in CGS units and in scientific notation. The negative exponent of the power of ten is stored in column 3 of each data record.

$J(H)/J_{do}$:

Normalized intensity, ratio of magnetic intensity measured after demagnetization to the NRM intensity. $J(H)$ = magnetic intensity (J) after demagnetization in field H. Field H is the demagnetization force given in columns 4-7. J_{do} = NRM intensity.

DECINATION:

Units are degrees.

INCLINATION:

DSDP AFD Sediment Paleomagnetism 4/87

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The sign (-, or blank for +) gives the polarity of the inclination. Units are degrees.

NGDC NOTES: (list of deviations from the field descriptions)

Description of deviation =====	Record Number(s) =====
Bottom interval depth is 0 (Top is not)	1-28, 30-32, 49-83, 85-143

DSDP AFD Sediment Paleomagnetism 4/87