

Tectonic structure, evolution, and the nature of oceanic core complexes and their detachment fault zones (13°20'N and 13°30'N, Mid Atlantic Ridge)

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Additional Supporting Information (Files uploaded separately)

Caption for Table S1

Introduction

The Supporting Information provided here includes two Figures (Figures S1 and S2), and two Tables providing information on all the samples recovered during the ODEMAR cruise using the ROV VICTOR (Table S1) or the shipboard dredge (Table S2). A full cruise report is available at archimer.ifremer.fr (<http://doi.org/10.13155/47149>), providing additional information on cruise operations and data. Samples are stored at IPGP rock repository, and available upon request (J. Escartín).

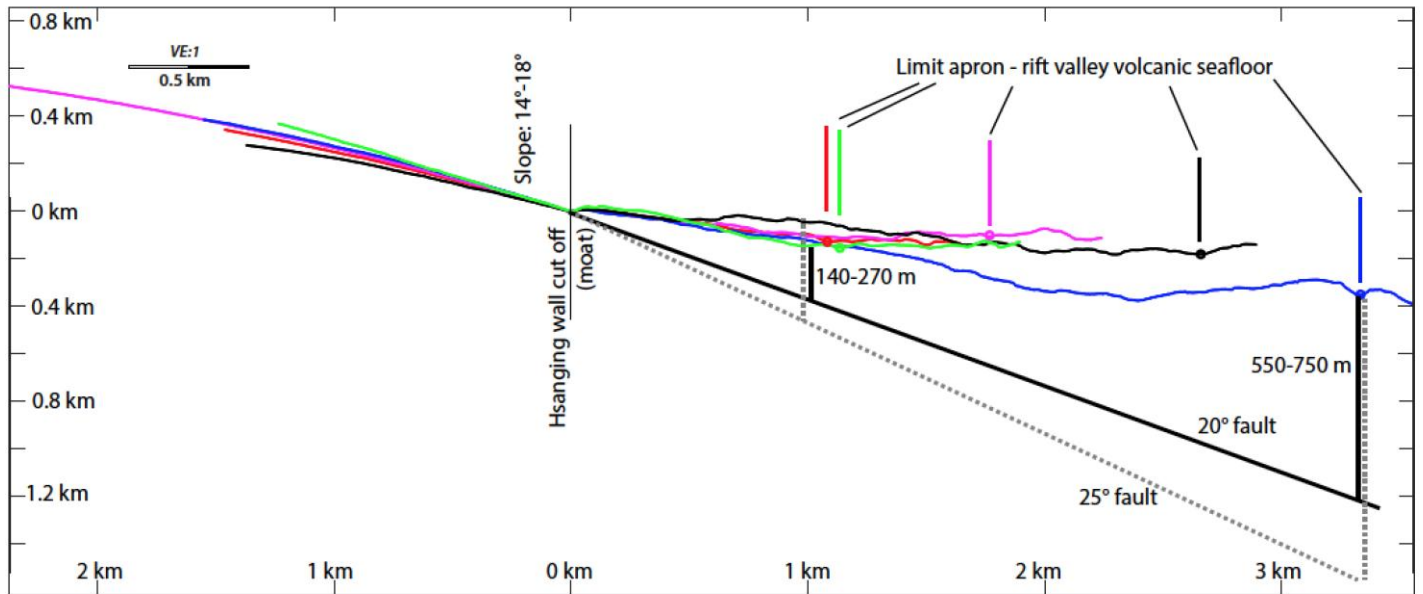


Figure S1. Microbathymetry extension-parallel profiles centered at the hanging wall cutoff of the $13^{\circ}20'N$ detachment (VE:1, no vertical exaggeration). The profiles have been aligned and shifted vertically using the base of the moat as a reference. The transition to volcanic seafloor along the rift valley floor is also indicated for each profile, showing variations in *apron* width. Slopes of the detachment fault surface at the hanging wall cutoff vary between 14° and 18° . To estimate the thickness of the *apron* above the fault surface, we have assumed constant fault slopes at depth of 20 - 25° , up to $\sim 10^{\circ}$ steeper than at the exhumation. Thicknesses of the *apron* above the detachment fault surface are given in m and indicated for both the 20° and 25° dipping faults.

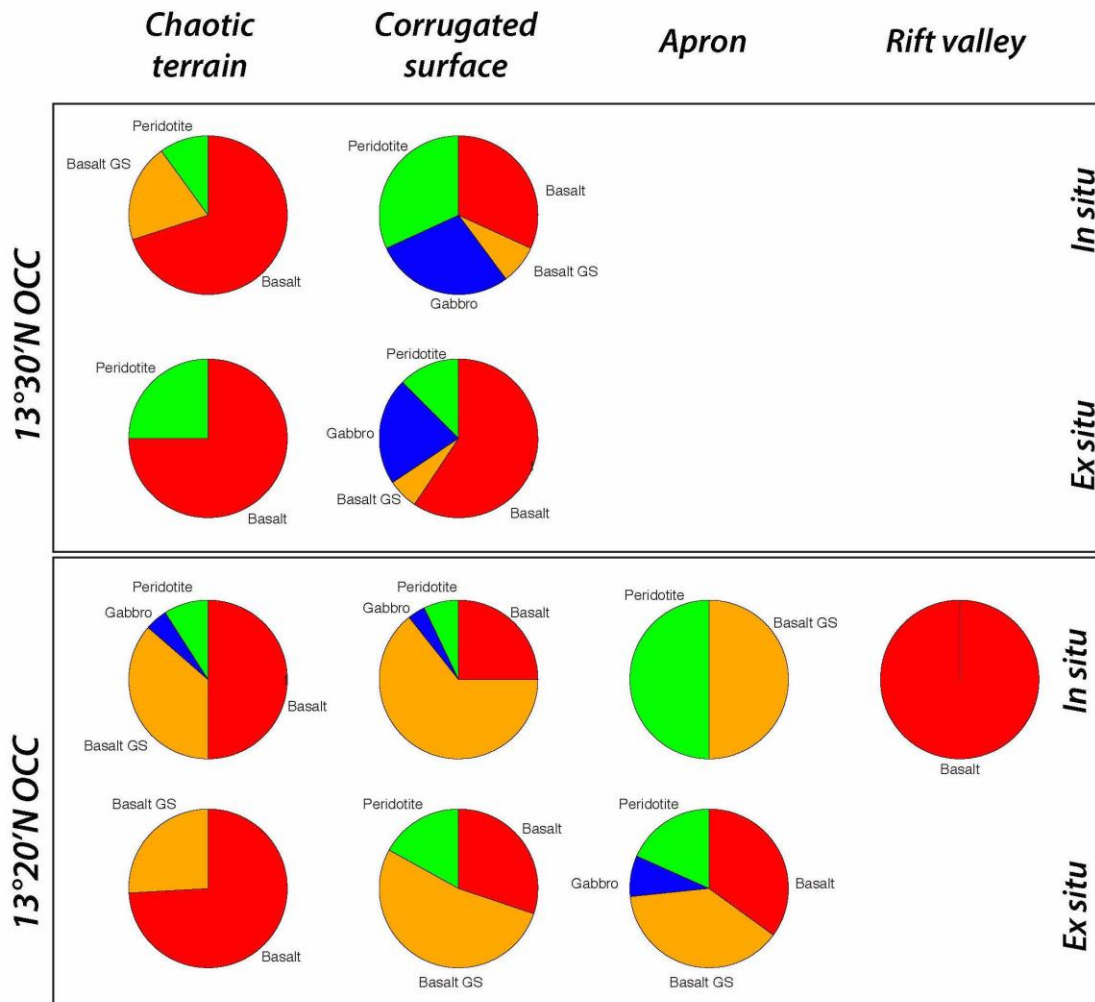


Figure S2. Primary rock types recovered at both the 13°20'N and 13°30'N OCCs, for each of the terrains defined in the text, and differentiating in-situ and ex situ samples. In this diagram we have differentiated between basalt showing green schist facies alteration (Basalt GS), or lacking it (red), as given in Table S1.

Table S1. ROV sample location information and rock description (see associated table file).

Dredge	On bottom			Off bottom			Lithology								Weight	Note	
	Latitude	Longitude	Depth	Latitude	Longitude	Depth	B	D	GS	G	PG	P	F	H			
ODM_DR01	13°34.75'N	45°01.27'W	2871	13°34.50'N	45°01.77'W	2316	60	0	0	0	0	0	0	0	0	60	Basalt, pillow fragments, some glass
ODM_DR02	13°29.75'N	44°57.22'W	2359	13°30.25'N	44°56.73'W	2191	300	0	0	0	0	0	0	0	0	300	Basalt, glass + one coral
ODM_DR03	13°29.20'N	44°56.21'W	2513	13°29.97'N	44°56.40'W	2202	110	0	0	7	0	0	0	1	115	Serpentinized peridotite, hydrothermal breccias with sulfides, felsic veins	
ODM_DR04	13°29.30'N	44°55.81'W	2733	13°29.60'N	44°55.81'W	2138	5	0	0	1.15	0.25	0.15	0	0	7	Greenschist facies dikes, metagabbro, serpentinized peridotite, plagiogranite	
ODM_DR05	13°16.68'N	44°56.01'W	3297	13°17.60'N	44°56.00'W	3154	0	0	0	80	0	720	0	0	800	Serpentinized peridotites, gabbros	
ODM_DR06	13°18.89'N	44°55.77'W	2643	13°18.89'N	44°55.50'W	2313	1.5	0	53.5	0	0	2	45(B)	0	100	Greenschist metabasalts, brecciated metabasalts, serpentinized peridotites	
ODM_DR07	13°16.69'N	44°56.80'W	2907	13°17.00'N	44°56.80'W	2735	0	0	0	0	0	150	0	0	150	Serpentinized peridotites	
ODM_DR08	13°17.18'N	44°56.74'W	2713	13°17.44'N	44°57.03'W	2636	-	-	-	-	-	-	-	-	0	Empty	
ODM_DR09	13°17.59'N	44°56.71'W	2761	13°17.42'N	44°57.16'W	2563	50	0	0	0	0	0	0	0	50	Basalts with thin Mn coating	
ODM_DR10	13°21.43'N	44°57.44'W	2819	13°20.94'N	44°57.58'W	2546	40	0	0	0	0	0	1(B)	0	40	Basalt and basaltic breccia, mostly fresh	
ODM_DR11	13°21.26'N	44°58.48'W	2806	13°21.10'N	44°58.63'W	2529	400	0	0	0	0	0	0	0	400	Basalt with abundant glass (hyaloclastites and pillow rims - dead coral)	
ODM_DR12	13°14.71'N	44°54.08'W	4289	13°14.91'N	44°54.59'W	3655	158	0	25	0	0	0	0	1	183	Basalt, pillow fragments and greenschist metabasalt	
ODM_DR13	13°34.20'N	44°55.80'W	3356	13°33.72'N	44°55.99'W	3002	130	0	15	0	0	0	4	0	155	Fresh and altered basalts, greenschist metabasalts, ultramylonites and quartz veins	
ODM_DR14	13°31.05'N	44°56.66'W	2495	13°30.81'N	44°56.78'W	2273	30	0	60	0	0	0	165 (P,G)	0	255	Fresh (with fresh glass) and altered basalt ; metaperidotites	
ODM_DR15	13°29.53'N	44°56.11'W	2608	13°29.76'N	44°55.71'W	2463	16	4	0	0	0	20	0	0	40	More or less impregnated gabbros and metadolerites, serpentinized peridotites	

Table S2. Location of ODEMAR dredges and summary of recovered lithologies. B: Basalt; D: Diabase; GS: Greenstone; G: Gabbro; PG: Plagiogranite; P: Peridotite; F: Fault rocks (primary lithology in parenthesis when available); H: Hydrothermal deposits. Notes provide a brief description of the material recovered in each dredge.