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Short Cruise Report RV SONNE cruise SO299/2

Singapore – Port Louis (Mauritius)
15.08.2023 – 02.09.2023

Chief Scientist: Morelia Urlaub
Captain: Oliver Meyer

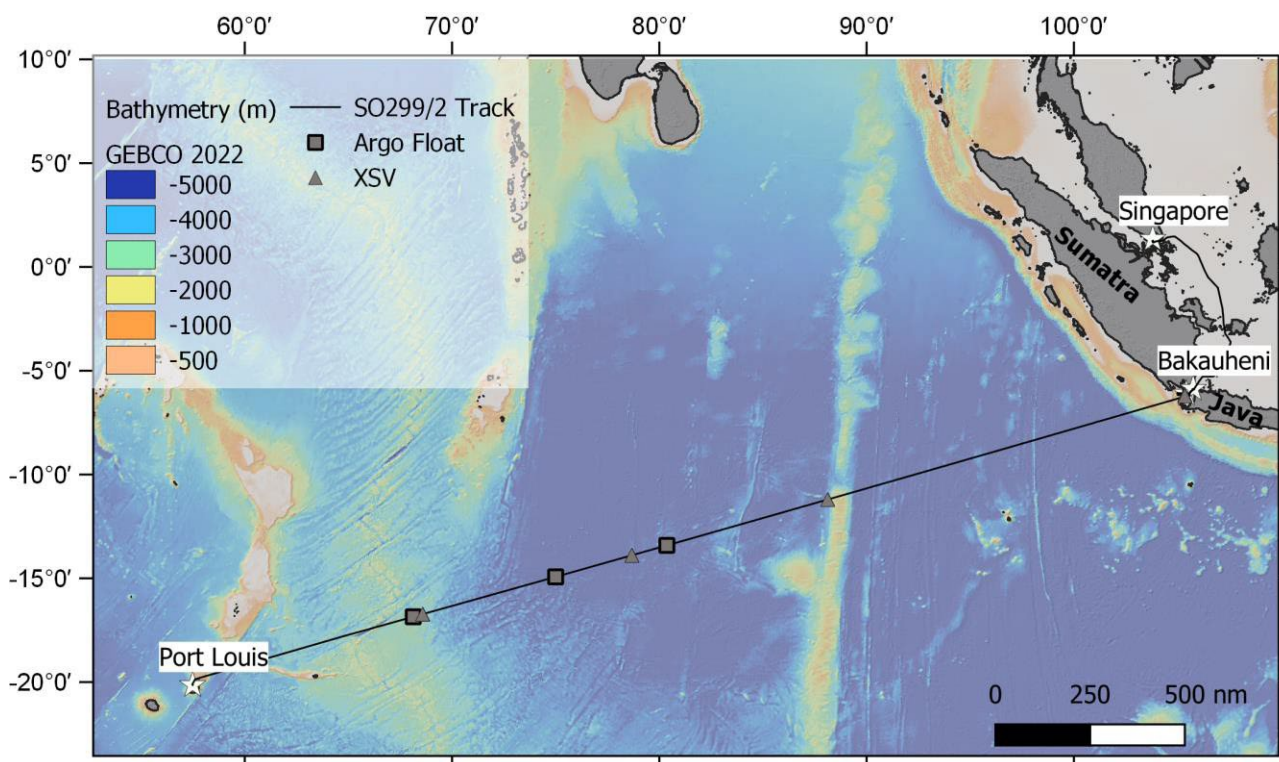


Fig. 1: Cruise track of RV SONNE cruise SO299/2.

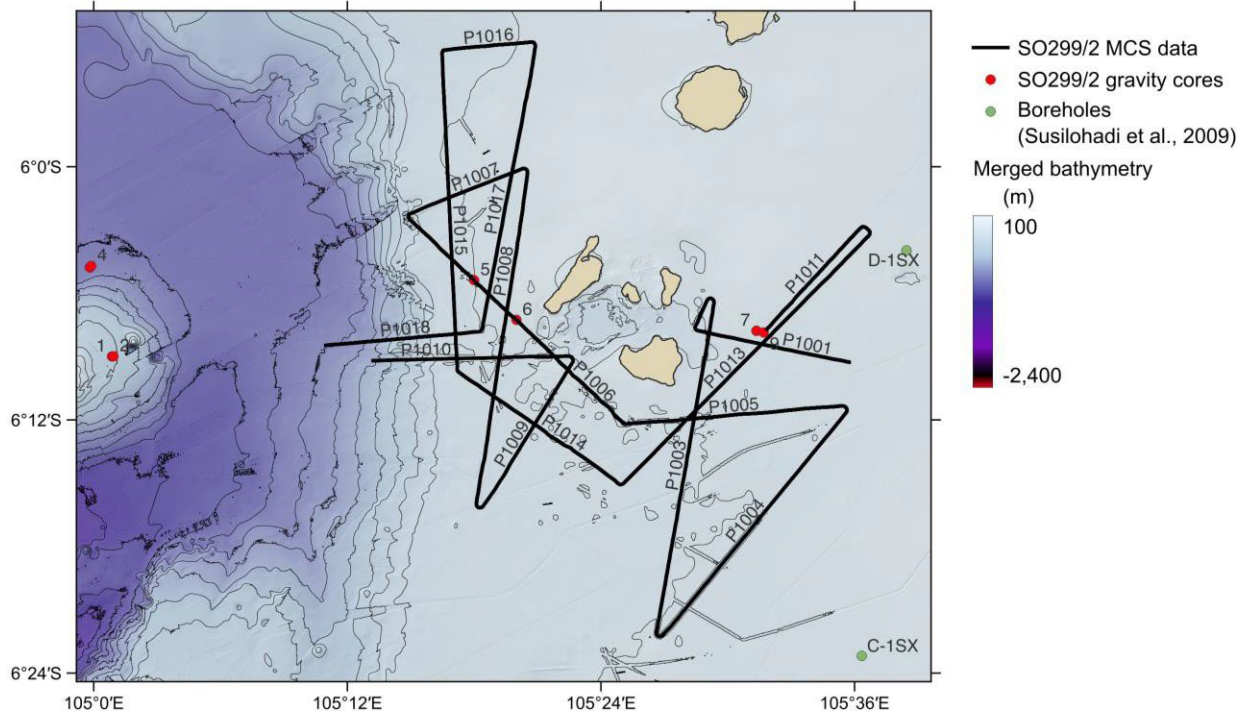


Fig. 2: Close-up of the main working area in the Sunda Strait including seismic profiles and sediment cores taken during cruise SO299/2.

Objectives

Cruise SO299/2 of the German research vessel SONNE was a transit cruise with four working days. The main scientific focus was on Krakatau archipelago in the Sunda Strait between the Indonesian islands of Java and Sumatra. The volcanic complex was the source of at least two major tsunamis in historic times. Reflection seismic profiles, hydroacoustic data, and sediment cores were collected West, South, and East of the archipelago. Furthermore, bio-optical observations for an improved underwater light field characterization and parametrization within the Indian Ocean were conducted on a transect from Singapore to Mauritius. On the transect five Argo Floats were deployed and sound speed profiles were taken.

Narrative

After a transit from Singapore to Bakauheni (Indonesia) for immigration and custom clearance in Indonesia, the ship sailed to its working area in the Krakatau area in the Sunda Strait. A first seismic survey of approximately 26 hours was followed by nine gravity coring stations, seven of which recovered sediment. A total of 34 m of sediment were recovered. A second seismic survey was then conducted, which lasted about 16 hours. The ship then sailed back to Bakauheni to obtain outward clearances. Once the ship arrived in international waters the underway measurements started. These included multibeam bathymetry, ADCP current and bio-optic measurements as well as the deployment of five Argo floats. Data acquisition and water sampling was stopped during a short stretch in the Australian EEZ and then before reaching the EEZ of Mauritius.

Acknowledgements

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List of participants

	Name	First name	Role	Institution
1	Urlaub	Morelia	Chief scientist	GEOMAR
2	Berndt	Christian	Lead seismics	GEOMAR
3	Bartels	Thies	Technician seismics	GEOMAR
4	Belo	Julie	Lead sedimentology	GEOMAR
5	Berndt	Janiene S��verine	Data management	GEOMAR
6	Furst	Liora	Hydroacoustics	GEOMAR
7	Klein	Elisa	Seismic watchkeeping	GEOMAR
8	K��hn	Michel	Seismic processing	GEOMAR
9	Matthies	Fiene	Hydroacoustics	GEOMAR
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11	Pank	Katharina	Sedimentology	GEOMAR
12	Petersen	Asmus	Technician coring	GEOMAR
13	Preine	Jonas	Lead hydroacoustics	Hamburg University, Germany
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15	Voss	Daniela	Technician bio-optics	ICBM
16	Wollschlaeger	Jochen	Lead bio-optical observations	ICBM
17	Ardhyastuti Supardi	Sri	Geology	BRIN
18	Karima	Shofia	Seismics	BRIN
19	Budi Nugroho	Adam	Hydroacoustics	BRIN
20	Pratama	Aditya	Geology	BRIN
21	Suendra		Observer Indonesia	Indonesian Navy

GEOMAR Helmholtz-Centre for Ocean Research, Kiel

ICBM Institute for Chemistry and Biology of the Marine Environment (ICBM)

BRIN Badan Riset dan Inovasi Nasional

Stationsliste

Station No.	Date and Time	Gear	Latitude	Longitude	Water Depth	Remarks/Recovery	
Sonne	[UTC]		[°S]	[°E]	[m]		
0	SO299/2_0_Underway-1	19.08.2023 04:35	WISS-DATA	05° 55.321' S	105° 43.669' E	3.5	Parasound, EM710
0	SO299/2_0_Underway-1	21.08.2023 22:45	WISS-DATA	05° 54.286' S	105° 44.336' E	60.9	Parasound, EM710
1	SO299/2_1-1	19.08.2023 06:29	XSV	06° 08.135' S	105° 33.426' E	65.7	XSV01 XSV01.asvp
2	SO299/2_2-1	19.08.2023 07:02	SEISSRC	06° 09.664' S	105° 37.015' E	57.1	Start P1000 (Part 1)
2	SO299/2_2-1	20.08.2023 09:15	SEISSRC	06° 09.254' S	105° 12.443' E	669.1	End P1000 (Part 1)
3	SO299/2_3-1	20.08.2023 07:02	XSV	06° 08.992' S	105° 21.333' E	90.4	XSV02 XSV02.asvp
4	SO299/2_4-1	20.08.2023 12:18	GC	06° 08.989' S	105° 00.865' E	379.5	GC1 (no recovery)
4	SO299/2_4-2	20.08.2023 13:33	GC	06° 08.984' S	105° 00.928' E	383.9	GC2 (no recovery)
5	SO299/2_5-1	20.08.2023 15:00	GC	06° 04.784' S	104° 59.807' E	943.4	GC3 KIEL0257GCK5401
5	SO299/2_5-2	20.08.2023 15:48	GC	06° 04.699' S	104° 59.880' E	848.9	GC4 KIEL0257GCL5401
6	SO299/2_6-1	20.08.2023 19:11	GC	06° 05.377' S	105° 17.992' E	100.5	GC5 KIEL0257GCM5401
7	SO299/2_7-1	20.08.2023 20:00	GC	06° 07.257' S	105° 19.995' E	83	GC6 KIEL0257GCN5401
8	SO299/2_8-1	20.08.2023 22:13	GC	06° 07.768' S	105° 31.352' E	49.6	GC7 KIEL0257GCO5401
8	SO299/2_8-2	20.08.2023 22:39	GC	06° 07.770' S	105° 31.355' E	49.8	GC8 KIEL0257GCP5401
9	SO299/2_9-1	20.08.2023 23:42	GC	06° 07.853' S	105° 31.692' E	56.8	GC9 KIEL0257GCQ5401
10	SO299/2_10-1	21.08.2023 00:39	SEISSRC	06° 07.849' S	105° 31.693' E	57.1	Start P1000 (Part 2)
10	SO299/2_10-1	21.08.2023 18:11	SEISSRC	06° 08.581' S	105° 10.008' E	837.9	End P1000 (Part 2)
11	SO299/2_11-1	21.08.2023 06:59	XSV	06° 12.845' S	105° 21.722' E	102.2	XSV03 XSV03.asvp
0	SO299/2_0_Underway-3	23.08.2023 21:10	ADCP	07° 46.200' S	100° 04.865' E	5546.6	Switch on
0	SO299/2_0_Underway-3	24.08.2023 10:20	ADCP	08° 31.149' S	097° 29.082' E	5442.9	Switch off (EEZ)
0	SO299/2_0_Underway-3	25.08.2023 01:37	ADCP	09° 31.069' S	094° 00.896' E	5305.5	Switch on
0	SO299/2_0_Underway-3	30.08.2023 15:00	ADCP	17° 02.421' S	067° 27.952' E		Switch off (EEZ)
0	SO299/2_0_Underway-5	23.08.2023 21:10	EM122	07° 46.222' S	100° 04.790' E	5536	Switch on
0	SO299/2_0_Underway-5	24.08.2023 10:20	EM122	08° 31.121' S	097° 29.182' E	5451.5	Switch off (EEZ)
0	SO299/2_0_Underway-5	25.08.2023 01:16	EM122	09° 30.170' S	094° 04.073' E	5308.5	Switch on
0	SO299/2_0_Underway-5	30.08.2023 15:00	EM122	17° 02.421' S	067° 27.952' E		Switch off (EEZ)
0	SO299/2_0_Underway-2	23.08.2023 21:10	UWS	07° 46.225' S	100° 04.781' E	5533.9	Switch on
0	SO299/2_0_Underway-2	24.08.2023 10:20	UWS	08° 31.104' S	097° 29.240' E	5451.5	Switch off (EEZ)
0	SO299/2_0_Underway-2	25.08.2023 01:37	UWS	09° 31.061' S	094° 00.920' E	5309.8	Switch on

0	SO299/2_0_Underway-2	30.08.2023 15:00	UWS	17° 02.421' S	067° 27.952' E		Switch off
12	SO299/2_12-1	26.08.2023 08:00	XSV	11° 12.299' S	088° 07.898' E	4471.2	XSV04
13	SO299/2_13-1	26.08.2023 14:04	FLOAT	11° 31.175' S	087° 01.979' E	4953	WMO ID 5905547
14	SO299/2_14-1	27.08.2023 07:11	FLOAT	12° 22.901' S	084° 00.452' E	5374.1	WMO ID 5905548
15	SO299/2_15-1	28.08.2023 01:00	FLOAT	13° 24.888' S	080° 21.847' E	4672.5	WMO ID 5905549
16	SO299/2_16-1	28.08.2023 09:00	XSV	13° 53.487' S	078° 41.016' E	4917.5	XSV05 (no data)
17	SO299/2_17-1	29.08.2023 02:28	FLOAT	14° 55.896' S	075° 00.036' E	5235.5	WMO ID 1901766
18	SO299/2_18-1	30.08.2023 08:59	XSV	16° 43.623' S	068° 35.463' E	3308.2	XSV06
19	SO299/2_19-1	30.08.2023 11:31	FLOAT	16° 51.366' S	068° 07.689' E	3026.3	WMO ID 1901767