[EJ] Eveningポスター発表 | セッション記号 S (固体地球科学) | S-CG 固体地球科学複合領域・一般

[S-CG58]沈み込み帯へのインプットを探る：海溝海側で生じる過程の影響

コンビーナ:山野 誠(東京大学地震研究所)、森下 知晃(金沢大学理工研究域自然システム学系)、藤江 剛(海洋研究開発機構)

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海溝の海側では、沈み込む海洋プレートの変形に伴ってさまざまな現象（海洋地殻の破砕、水の浸入、火成活動等）が起きている。沈み込み帯に対する境界条件（インプット）を知るためには、これらの過程がどのように進行し、その結果海洋プレートがどう変化するかを明らかにすることが重要である。本セッションでは、沈み込み帯へのインプットに関する以下のような話題について、地球物理、地質、岩石学等、幅広い分野からの研究発表・議論を行う。

・海溝海側でのプレート変形に伴って生じる過程
・その過程により海洋プレートが受ける変化
・その過程と海洋プレートの元々の構造の関係
・海洋プレートの変化が沈み込みプレート境界に及ぼす影響

日本海溝や南海トラフだけでなく、他の海溝についての研究、異なる海溝間の比較研究の発表も歓迎する。

[SCG58-P03]Bend faulting and a large seamount in the central Japan Trench

*藤江 剛[1]、尾鼻 浩一郎[1]、海宝 由佳[1]、山田 知朗[2]、小平 秀一[1]、一瀬 建日[2]、三浦 誠一[1] (1.海洋研究開発機構、2.東京大学地震研究所)

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Hydration of the subducting oceanic plate determines the amount of water transported from Earth's surface into its interior, and plate bending-related normal faulting just prior to subduction is considered to promote hydration. The development of the bend faults varies among subduction zones dependent on to various factors such as the angle between the current trench axis and the past spreading axis, and these variations in bend faulting is considered to control regional variations in water transportation.

Since 2009, to reveal the nature of the incoming oceanic plate and its structural changes owing to bend faulting prior to subduction, we have conducted several extensive controlled-source seismic survey in the trench-outer rise areas of the northwestern Pacific margin. We confirmed oceanic plate is systematically altered by bend faulting near the trench and the alteration generally starts at 150 km from the trench axis.

In the outer trench area of the central to southern Japan Trench off Fukushima, there are many large seamounts near the trench axis on the incoming oceanic plate. In 2017, to investigate the impact of these seamounts on the bend faulting, we conducted an extensive controlled-source seismic survey using multi-channel seismic (MCS) reflection system and Ocean Bottom Seismometers (OBSs) across one of the largest seamount located at about 100 km from the trench axis. Unfortunately, the coverage of the seismic reflection data collected by MCS system was not good because of bad weather condition. Therefore, we applied seismic interferometry to the OBS data and created a seismic reflection profile to compensate the MCS data. Together with these seismic reflection profiles, we applied travel-time tomographic inversion using the OBS data to determine P-wave velocities. Although we could not constrain the detailed seismic structure around the seamount because of poor seismic reflection data,

our preliminary P-wave velocity model derived from the OBS data implies that the impact of the existence of the seamount to the bend faulting is confined to narrow area. In this presentation, we will show the obtained seismic velocity model in comparison with those of the northern Japan Trench area and discuss the potential impact of the seamount on the bend fault hydration.