明治大学先端数理科学インスティテュート

MMS現象数理カフェセミナー

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Across the North Pacific, dietary-induced stress of breeding rhinoceros auklets increases with high summer Pacific Decadal Oscillation index

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Abstract: Multi-colony studies of breeding seabirds may provide insights into the mechanistic links between large-scale climate variability and local changes in prey availability. To examine how inter-annual variability in the Pacific Decadal Oscillation (PDO), a dominant climate index, affects rhinoceros auklets Cerorhinca monocerata across the North Pacific, we measured inter-annual changes in nutritional stress of adults breeding on 5 colonies. We also examined concurrent changes in mass and energy content of food loads delivered to chicks. We found that higher summer PDO values were associated with increased stress levels and lower mass and energy contents of the food loads in both the western and eastern North Pacific colonies. Our results highlight the complexity of the mechanisms of how large-scale climate variability affects seabirds with a large geographical distribution.





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