

## Water depth and sedimentation rate controls of dark layer formation in the northern Japan Sea as revealed by tephrochronology

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Alternation of dark and light colored layers is the characteristic lithological feature of the late Quaternary sediments of Japan Sea. Weak ventilation is related to the formation of dark layers. Strength of ventilation was thought to be changed at each dark layer. That means that number of dark layers would be different among the cores collected from the different water depths. Then, depth occurrence of dark layer might suggest the strength of ventilation. Sedimentation rate, on the other hand, might affect the preservation potential of the dark layers. No detailed examination on the water depth and sedimentation rate control on dark layer occurrence, however, has been carried out. Tephra is the best time marker to correlate to the cores. Using number of dark layer between tephras among the cores collected from the different water depth and sedimentation rates in the northern Japan Sea, we examined the effects of water depth and sedimentation rate. Results showed clear depth control and possible sedimentation rate control. Thus, difference of water depth of coring site and of sedimentation rate of the core must be considered on the dark layer correlation.