

Development of a portable percussion piston corer

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We developed a new portable percussion piston corer for lake and shallow marine sediment coring from a frozen ice surface. This corer is less than 100 kg in total and can be separated into individual components. Therefore, it can be carried to extreme environments such as Antarctica and high mountains, where an application of mechanical drilling is nearly impossible. The percussion coring enables us to obtain relatively coarse and hard sediments down to the basement. The main body of the corer is composed of a transparent polycarbonate pipe, which makes it easy to check length and facies of the cored sediments. The polycarbonate pipe is also suitable for preservation of the sediment and easy to replace for subsequent coring. Overall, this new corer has advantages for lake/marine sediment coring in extreme (cold) environments, and may be applied to a wide range of geoscience fields.

Keywords: Portable percussion piston corer, Lake sediments, Shallow marine sediment