Poster Number

18

Topic	Effect assessment
Title	**Derivation of Marine and Freshwater Sediment Quality Guideline for Metals in Korea**
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Summary: Sediment quality guidelines (SQGs) developed in North America have been used for the sediment quality assessment in other countries located in other continentals such as Australia and Hong-Kong. It was, however, problematic in Korea to use the SQGs for sediment quality assessment because the background levels for some metals in Korea are higher than TEL or ERL. In 2008, Ministry of Land and Transport and Maritime Affairs in Korea launched a new project to develop marine environmental standards for sediment. At that time, sediment toxicity methods using indigenous species (benthic amphipods, copepods and sea urchin) have been already developed and used for sediment quality assessment. So we tried to derive a site-specific SQGs using sediment toxicity database developed in Korea. Sediment toxicity test using three indigenous species were conducted against polluted sediments nation-widely collected from contaminated sites. Metal concentrations including conservative elements (Al, Cs, and Li) and other parameters such mean grain size and TOC (%) were analysed in all of tested sediments. Metal concentrations in toxic sediments were screened by background concentration of metal in the sediment and then by co-occurrence analysis methods. Through this screening step, sediments which could be toxic by other chemicals and stressors were screened out. Finally, low and high SQG values for As, Cd, Pb, Cu, Zn and Hg were derived. The Low SQGs are higher than TEL or ERL, the high SQGs are comparable with PEL or ERM. For the further step, geochemically normalized metal concentrations in sediment will be used for derivation of SQGs.