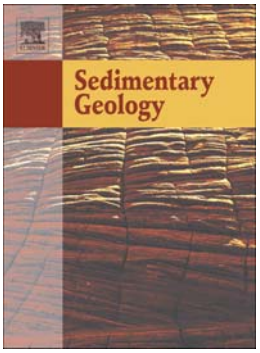

Magnetic signature of river sediments drained into the southern and eastern part of the South China Sea (Malay Peninsula, Sumatra, Borneo, Luzon and Taiwan)

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Magnetic signature of river sediments drained into the southern and eastern part of the South China Sea (Malay Peninsula, Sumatra, Borneo, Luzon and Taiwan)

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Abstract

Magnetic properties of 22 river samples collected in the Malay Peninsula, Sumatra, Borneo, Luzon and Taiwan have been investigated in order to magnetically characterize the sediments drained and deposited into the South China Sea. The geological formations as well as the present climatic conditions are different from one region to another. Laboratory analyses include low-field magnetic susceptibility, anhysteretic (ARM) and isothermal (IRM) remanent magnetizations acquisition and decay, back-field acquisition, thermal demagnetization of three-axes IRM, hysteresis cycles and low-temperature magnetic measurements. The magnetic properties indicate that the sediments are a mixture of hematite, magnetite and pyrrhotite in different proportions depending on the region. Combined with results previously reported for the three main Asian rivers (Pearl, Red and Mekong rivers), the new data indicate that, in general, hematite-rich sediments are delivered to the southern basin of the South China Sea while the northern basin is fed