



海南联网海底电缆护套绝缘监测方法

王星¹, 尚涛², 黄贤球², 陈兵², 陈俊武¹, 陈爱文¹

摘要：利用基于Matlab所建立的护套感应电流和电容电流模型，讨论了电缆护套绝缘在各种故障情况下护套电流的响应特性。研究发现，海底电缆护套中的感应电流与电缆护套绝缘状态的关系不密切，无论护套绝缘是否发生异常，其感应电流基本保持不变；护套电容电流则与电缆护套绝缘关系密切，而且这种关系呈现出单一函数对应关系，因此，可以从电缆两端测得的电容电流的大小，计算出电缆护套故障的相别、位置等信息，从而实现海底电缆外绝缘情况的监测。

关键词：海底电缆；护套绝缘；感应电流；护套电容电流；Matlab

The Insulation Inspection Method for Submarine Cable Sheath of Hainan Grid Interconnection Project

WANG Xing¹, SHANG Tao², HUANG Xian-qiu², CHEN Bing², CHEN Jun-wu¹, CHEN Ai-wen¹

Abstract: With the suggested Matlab-based models for inductive current and capacitance current in the sheath, the characteristics of shield currents are examined under various fault circumstance of the cable sheath insulation. The research discovers that the inductive current in the sheath is not much influenced by the situations of the submarine cable sheath insulation and keeps almost the same value. In vivid contrast the capacitance current is deeply depending on the sheath insulation, and the relationship between the capacitance current and the sheath fault appears as a single function. Therefore, the information about the faulting phase, the failure position etc. can be drew from the capacitance current measured at the two sides of the cable. By this way, the insulation inspection of submarine cable could be realized.

Key words: submarine cable; sheath insulation; inductive current; capacitance current; Matlab

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