

MAXWELL'S EQUATION AND GENERAL LOCAL  
COVARIANCE

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A quantization scheme both for the vector potential and for the field strength tensor is developed within the algebraic approach to quantum field theory on curved backgrounds. Although this procedure has the advantage of allowing an explicit construction of Hadamard states on a large class of spacetimes, it is shown that it leads to a violation of the principle of general local covariance on account of topological obstructions.