

TO THE QUESTION OF THE LIMITING TRANSITION TO ZERO MASS  
AND RENORMALIZABILITY  
IN THE MASSIVE YANG-MILLS FIELD THEORY

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It is shown that in perturbation theory for the massive Yang-Mills field there is no continuous limiting transition to zero mass and the theory is unrenormalizable. These results are the consequence of the singularity of zero chirality (three-dimensionally longitudinal) quanta interaction, the singularity which is absent for the neutral vector field. The formalism that is the generalization of the radiation gauge to the non-zero mass case and in which the interaction of three-dimensionally longitudinal quanta is extracted explicitly, is built. The consideration in this formalism makes the assertion of the existence of continuous limiting transition to zero mass and of renormalizability beyond the perturbation theory extremely likely.