

**MATHEMATICAL MODEL OF AN OPTOELECTRONIC POSITION-TO-DIGITAL  
CONVERTER WITH AUTOCORRECTION OF CONVERSION  
ERROR CAUSED BY CODING SCALE BEATS**

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The paper presents a mathematical model of code mating of an optoelectronic position-to-digital converter. The model takes into account the effect of external destabilizing factors. The main defects of the optomechanical unit are listed and the influence of such factors on the converter response function is shown. An example of visualizing the information about the influence of vibropercussions on response function error for various amplitudes of vibration oscillations is given. The error is calculated and estimated for the case of autocorrection show the adequacy of the model and the efficiency of using autocorrection.