ABSTRACT TITLE

Digital Control Design of a CCD-based Tracking Loop for Precision Beam Pointing

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ABSTRACT TEXT

A tracking control loop was designed for an optical communication package that will use a high frame rate CCD array for precision beam pointing. The design was performed in discrete time domain with type I compensation and sampling rate of 2 KHz. Performance of control loop was analyzed, showing feasibility of using a low cost fine steering mirror for stable accurate beam pointing. Preliminary measurements agreed with theoretical predictions and demonstrated a closed-loop tracking bandwidth of 400 Hz.

BRIEF BIOGRAPHY

Homayoon Ansari received his Ph.D. degree in electrical engineering from the University of California, Berkeley, in 1988. Since then, he has been a member of technical staff at the Jet Propulsion Laboratory. His experience includes ultrashort pulse generation, semiconductor laser dynamics, acousto-optic signal processing, and laser pointing and tracking.