On the realization of electronically current-tunable CMOS OTA

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Abstract: A CMOS operational transconductance amplifier (OTA) called as an EOTA, where its transconductance gain can be electronically and linearly tuned is proposed in this paper. The realization method is achieved by squaring the transconductance gain of the balanced CMOS OTA. The EOTA transconductance gain can be linearly tuned by an external bias current for three decades. The linear input-voltage range of about 1 Vp with less than 1% nonlinearity is obtained. The usefulness of the Proposed EOTA is demonstrated through application example with a current multiplier. The performance of the proposed circuit is discussed and confirmed through PSPICE-simulation results. (C) 2006 Elsevier GmbH. All rights reserved.

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