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## Documents

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**Enhanced gain saturation model of non-linear semiconductor optical amplifiers**
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**Abstract**
This study proposes an enhanced gain saturation model of non-linear semiconductor optical amplifiers (SOAs) by incorporating material-dependent gain compression factor. The rate equations are utilised with the extra gain compression term for Indium-Gallium-Arsenide material-based SOA to account for the steep relaxation oscillations behaviour of non-linear SOAs. The proposed gain saturation model is verified with experimental results that showed very good agreements with a mean square error of 0.094. © The Institution of Engineering and Technology 2018.

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