

We examine the response to the sudden switch of the pump parameter in a multimode semiconductor laser with intensity coupling on a model whose validity has been successfully compared to experimental results. We find the existence of a very slow modal evolution governed by a master mode, which reaches its steady state on a time scale that is a couple of orders of magnitude longer than that of the total intensity. The practical consequences for applications are examined, such as the temporal evolution of the spectral width of the laser emission and the time at which its steady state is attained. Issues related to modeling choices, such as the number of modes and their placement with respect to line center, are discussed