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A well known issue when performing Operational modal analysis in the time domain is the challenge of choosing the right order of the system matrix. Setting the order higher than the rank of the system results in over fitting, i.e. having more poles to place than modes of the system. This results in fitting poles to noise or non linearities of the system. In this paper a method to avoid over fitting by reducing the physical channels to a reduced number of pseudo channels condensing the relevant physical information and leveling the level of energy in each channel is suggested.

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