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Memory usage

As FDTD is memory demanding, GSvit is designed to save some amount of memory, not allocating the data arrays that might not be needed. This option is by default switched off and can be switched on via XSvit or by setting MATMODE_CHECK option in the parameter file. It still does not cover the whole spectrum of possible memory savings that will be implemented in future, however in certain cases it can be still helpful.

In the following example the memory demands for running calculation on the same box size (300x300x300) with different materials inside it are evaluated.

material	Used memory (GB)
none	
dielectric tabulated	
dielectric full	
metallic ADE	
metallic PLRC	

Sample parameter file: [memory handling](#).

A 300x300x300 computational domain with a plane wave and a sphere of different material, with different material storage modes used.



Memory can be further saved by using only tabulated materials or defining that there is no electrical or no magnetic properties variance in the computational domain. On the other hand, the most demanding material regime are related to handling of metals (PLRC, ADE), where we need to store some extra fields.

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