

# **EM Modeling of Human Behind Walls**

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## **Project Summary**

The primary objective of this research is to detect the presence of humans behind non-homogeneous walls. This is achieved by a two-step approach. First accurate numerical and analytical EM characterization of building materials, specifically layered composite dielectric walls, will be performed. The results of the EM modeling will then used to devise effective algorithms that achieve proper human RCS registration behind these walls. The changes in human RF signature with and without the presence of wall are important to assess wall dispersion and attenuative effects. These signatures along with wall scattering responses will be studied and employed to develop techniques to mitigate, or possibly remove, the wall masking effects on the detection of humans.