

# Using TLM Method For Simulation a New Mine Detection Technique

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**Abstract-**The analysis and study of mutual coupling between two opposite microstrip antennas help to investigate an efficient method for mine detection technique. The study involves the effect of relative distance between two patches on the level of the mutual coupling between them. Then the effect of placing a dielectric media above the antenna system (to avoid the effective dielectric constant phenomenon), the system is then put over two materials in order to judge (in an approximate manner), the effect of these materials on the coupling level. Recording these responses, the effect of buried objects will clearly appear as it will affect the previous coupling level received by the receiving antenna. These results can be followed in steps to be applied as a mine detection technique. The antenna system was fabricated, measured and the results were compared with the simulations using both MoM, and TLM numerical techniques.

**Keywords-** Microstrip antennas, Mutual coupling, TLM, MOM.