Transient Field Coupling into Aircraft Cables. EMP Stroke

Problem Definition
In this example Susceptibility Hybrid Analysis Type is applied to case when EMP is traveling to the aircraft as a plane wave from front direction.

Model of aircraft is shown in the following figures.

Fig. 1. Realistic aircraft

Fig. 2. Simulation model

Fig. 3. Aircraft and excited by plane wave

Two types of cables are considered: unshielded twisted pair (UTP) and shielded twisted pair (STP).

Cable routing in aircraft and terminations are represented in the following figures.
Numerical Results
Comparison of coupled voltage at cables termination is shown in the figures below.

![Numerical Results Diagram](image-url)
Surface current and charge distributions are shown in figures below.

Fig. 8. Current distribution on aircraft

Fig. 9. Current distribution on aircraft