



Thales Alenia Space

Aerospace applications of PKM



Università di Catania

Within the framework agreement between the DII (ex DIIM) and Thales Alenia Space, with headquarters in Via Saccomuro, Rome, has developed a fruitful scientific collaboration, through thesis and research contracts in the kinematics and dynamics of complex mechanical systems for the realization of satellite dishes. In particular:

1. POINTING SYSTEM FOR DOUBLE REFLECTOR ANTENNA

Mechanisms for aerospace applications, in collaboration with Thales Alenia Space in Rome, was carried out the analysis and design of a tracking system for satellite dishes. The mechanism has a tripod structure and protects the antenna from high inertial loads that are generated during the launch phase. Is been realized (Figure 2b) a new parallel kinematic mechanism for a Gregorian antenna with dual reflector in place of the pointing system shown in Figure 2a.

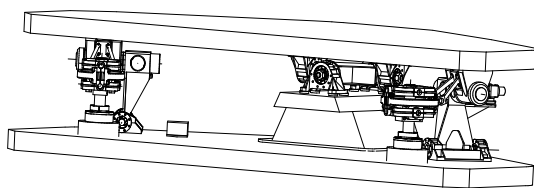


Figura 1

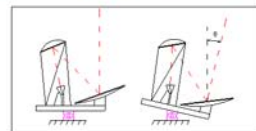


figura 2a

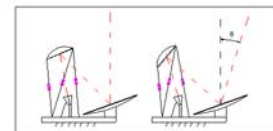


figura 2b

2. FORM FINDING ED OTTIMIZZAZIONE DI TENSO-STRUTTURE PER LDR

The research is aimed to *form finding* and optimization of the parabolic surface of tensile structures for *Large Deployable Reflector* (Figure 3), which will be built by Thales Alenia Space.



Figura 3

Scientific responsible of UNICT: *prof. ing. Rosario Sinatra*