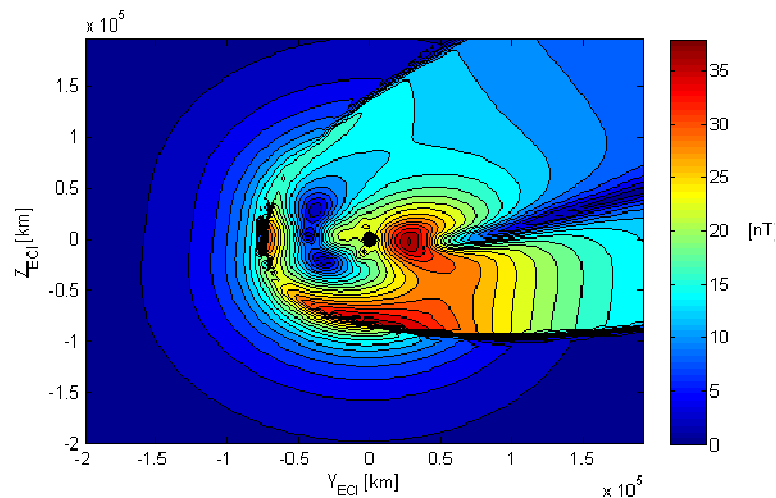
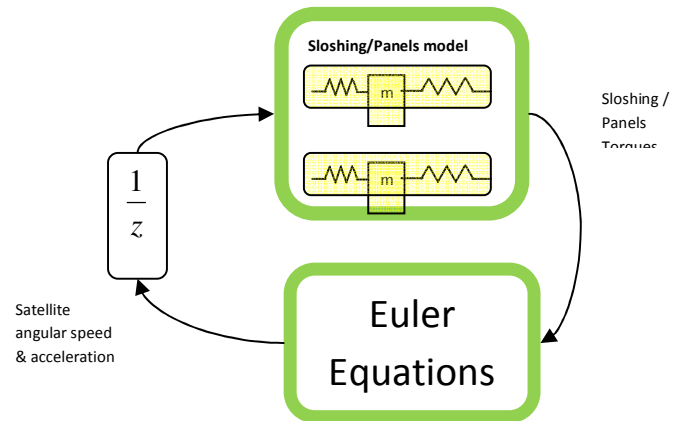
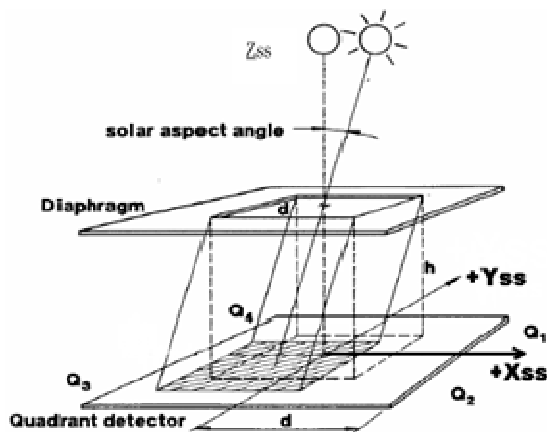


# Simulink Models



TEMIS srl provides custom models to satisfy the customer modelization requirements. The models are provided as open code - no hidden algorithms and they are grouped in TEMIS proprietary simulink libraries

The following Simulink models have been developed and already validated

during the various projects TEMIS has been involved

## PLANT

- Euler equation
- Kinematic equation
- Orbit propagator
- Sloshing
- Flexible solar panel
- ECI to ECF rotation
- Gravity gradient
- Solar disturbances

## SENSORS

- Gyroscope
- Coarse sun sensor
- Fine suns sensor
- Earth sensor
- Accelerometer
- Star sensor

## ENVIRONMENT

- internal magnetic field (IGRF).
- magnetosphere field (Tsyganenko model)
- Earth gravity field (18<sup>th</sup> order)
- Moon propagator
- Sun propagator
- Albedo (low and high altitude)
- Third body perturbation

## ACTUATORS

- Magnetic torquer
- Reaction wheel
- Thrusters
- Solar array driving mechanism