

Title: Deep space communication by using Cubesats

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Asteroid mining offers the possibility of revolution supply and availability of many sources vital for human sources, also there are private companies that support asteroid mining for recognition precious metals. Hence, the new missions are defining beyond LEO, therefore light-time communication delay issues, such as time lag and low bandwidth, will prohibit this type of operation because of huge data and limitation at windows to DSN. Hence, several solutions have been considered such as use higher frequency bands direct to ground, spacecraft autonomy system, swarm small satellites asteroids prospector etc. by this way the communication is the most important subsystem for this issue, based on the previous researches for prospecting of asteroids, Ka or X band is used for direct communication to ground and S or UHF band is used for constellation. In this proposal a communication subsystem for a small-satellite (1U, 2U…) by direct communication to ground and constellation by mother ship and mining robot is investigated.

Biography

Vahid Rastinasab is curently P.HD student at BIT, China. He is technical leader of Beihang university small satellite project and EMC laboratory assistacne at BUAA, his paper received 2nd prize at international colegitave innovative satellite contest, HIT, China, and he has more than 10 publication at journals and international conferences.

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Session name/ number:
Category: Oral presentation