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THE REIMEI LI-ION BATTERIES AFTER MORE THAN 12 YEARS OF OPERATION

Abstract

The satellite 'REIMEI' was launched in 2005, this satellite is one of the first spacecraft to use Li-ion batteries. The orbit of the satellite is a low earth orbit, over 6500 charge/discharge cycles have been reached and REIMEI is still operating. Twelve years have passed and we are trying to estimate the remaining useful capacity and state of health for the REIMEI Li-ion batteries. However, the estimation of remaining useful life for Li-ion cells is not trivial, since their degradation is caused by many physical and chemical processes which get accelerated depending on the working environment and operating conditions. In this presentation we will focus on the performance analysis of the REMEI Li-ion batteries. Also, a method to estimate the state of health for Li-ion cells will be presented.