

Background

- In an effort to optimize the current battery chemistries, optimization techniques are being studied, enabling batteries to last longer and degrade slower
- This research aims to optimize the use of batteries in small electric aircraft with digital models simulated in MATLAB – Simscape.
- Here, we modeled the deterioration of the battery under these constraints for maximum battery health;
- State of charge (SOC)
- Depth of Discharge (DoD)
- Charging rate



https://cessnaferrypilot.com/

- 6-seater non-electric aircraft for short-haul flights
- 300 horsepower (220 kW)
- Max speed:280km/hr
- Cruise speed:262km/hr
- 1352km range with a 45 minute reserve
- 110 Kilowatts-hour battery capacity



A MULTI-DOMAIN MODELING APPROACH TO ELECTRIC AIRCRAFT BATTERY DEGRADATION: ROLE OF CHARGING PARAMETERS

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