2019 TCC Houston Wearable Technologies Workshop

Wireless Distance Charging Challenge

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- **Challenge Motivation**: Interest from various stakeholders at NASA JSC in data from astronaut-worn devices on ISS, such as for radiation, acoustics, or activity assessments.

Personal CO2 Monitor
(Cory Simon, Justin Bautista)

Crew Active Dosimeter
(Martin Leitgab)

Multi-sensor Crew Device
(Justin Bautista, Martin Leitgab)

- **Problem Statement**:
  - Issue at hand: Power management activities impact operations on ISS
    - Device interaction for recharging takes astronaut time away from experiments on ISS (doff, plug in for charging, unplug, don)
    - During charging, device not useable for operations: No on-human data collected for surveying; no alerting capabilities
  - Possible mitigation path: <u>Autonomous wireless charging solutions</u>
    - Would decrease the need for power management activities or entirely eliminate them
    - When combined with wireless data transfer would also enable area monitoring/stationary sensors with smaller resource footprint