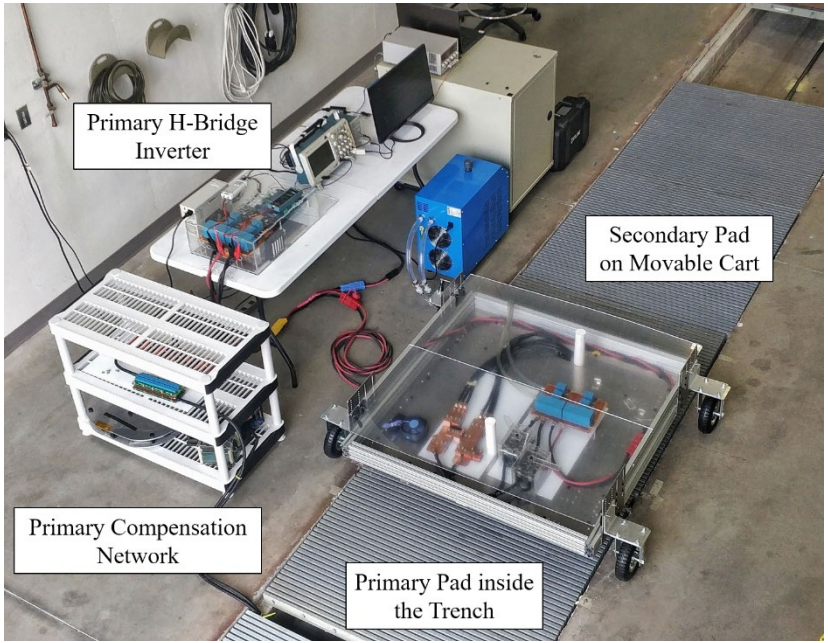
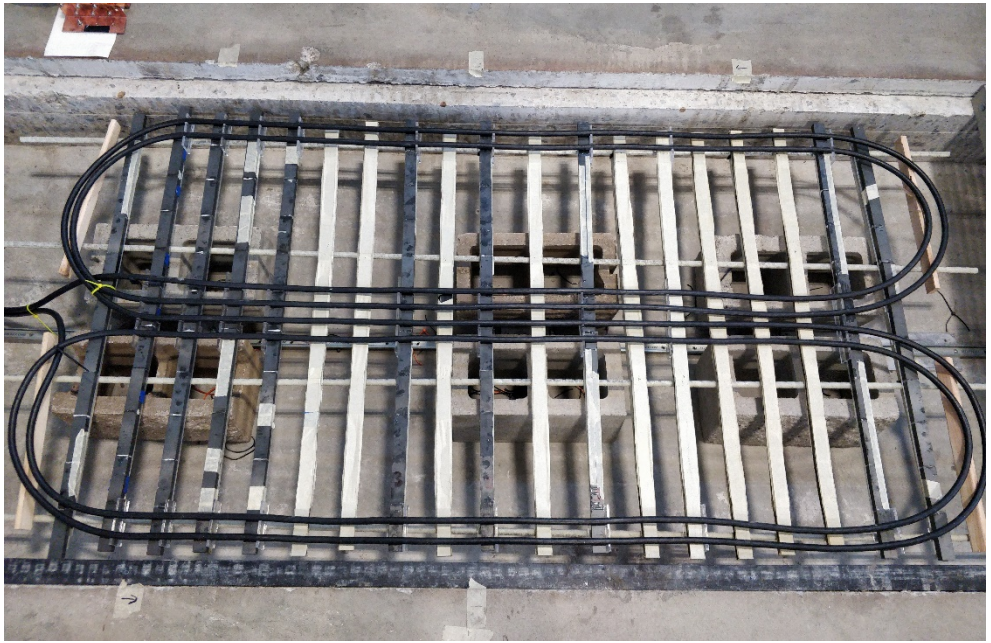
Wireless Charging Updates at Utah State University

Abhilash Kamineni
Utah State University Power Electronics Laboratory

DWPT System Developments

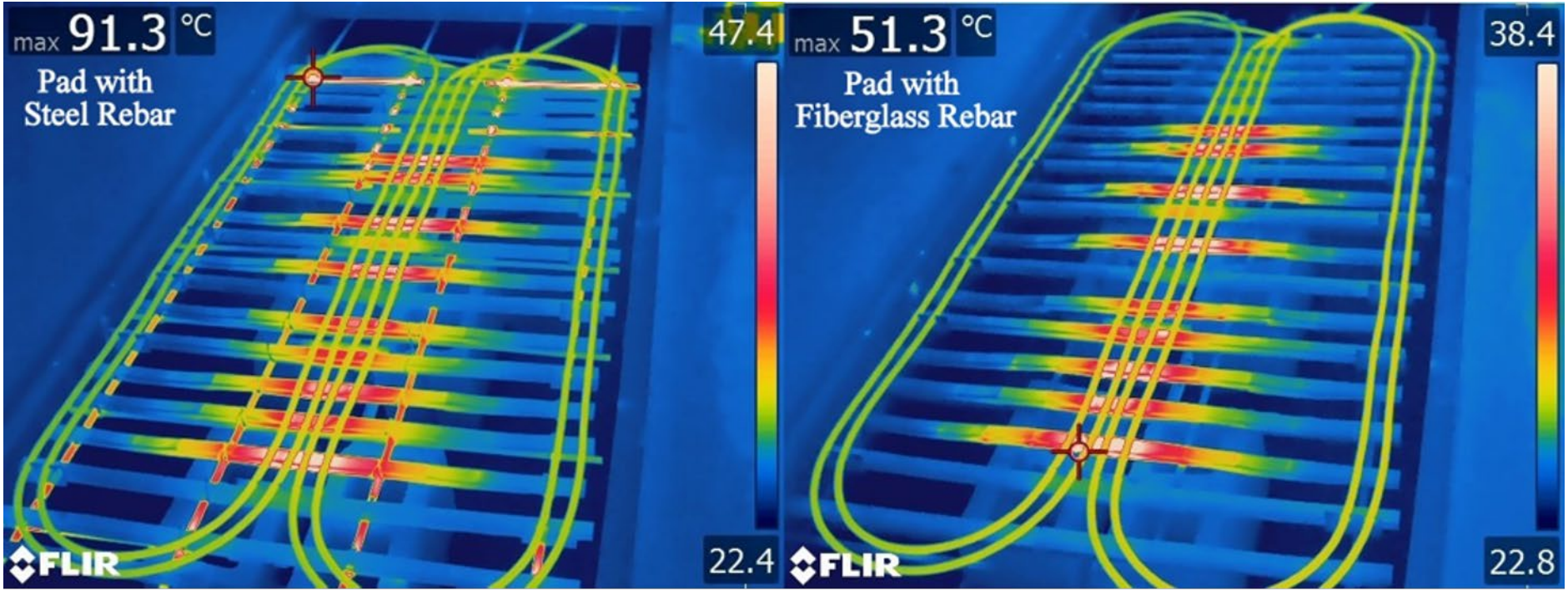
- 56 kW power transfer, 92.9% efficiency
- Open coil structure to allow for good bonding with pavement





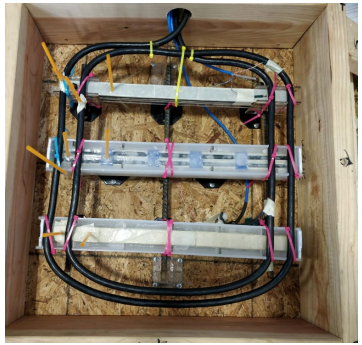
DWPT System Developments

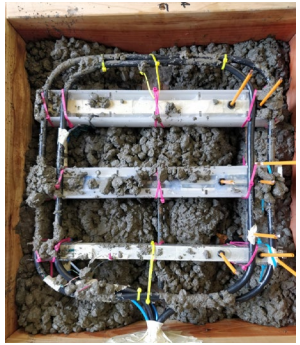
- Loss study

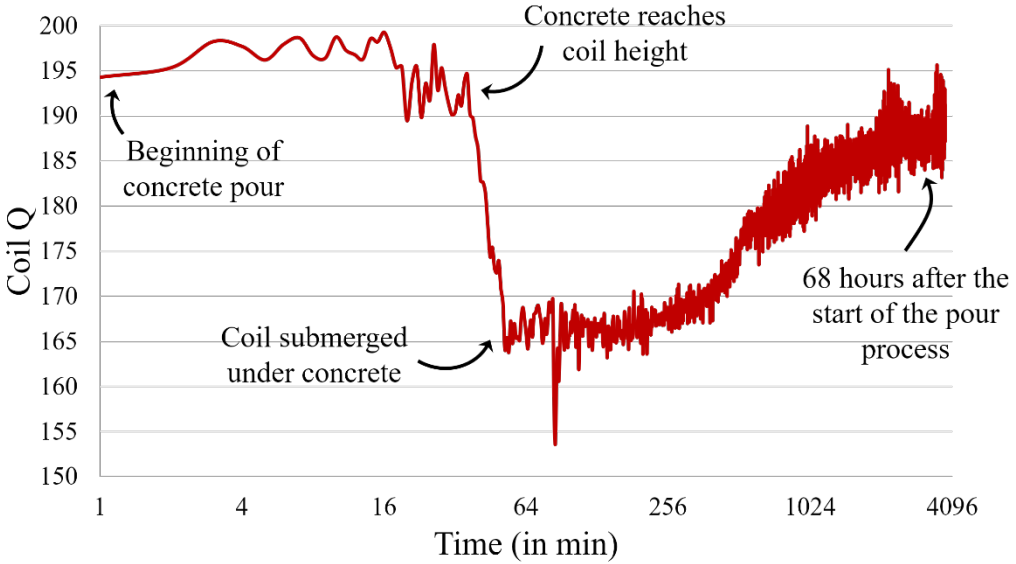


DWPT System Developments

- Concrete embedded coil





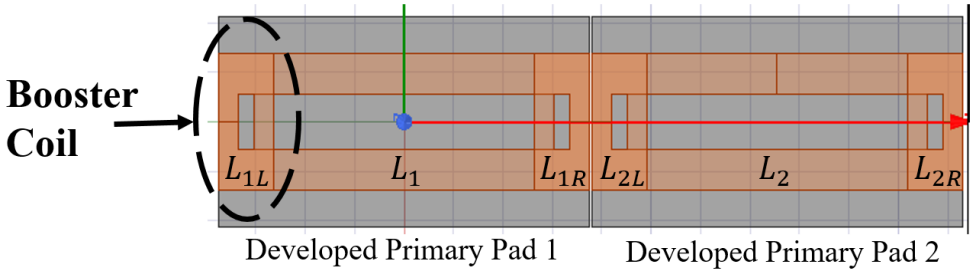


DWPT System Developments

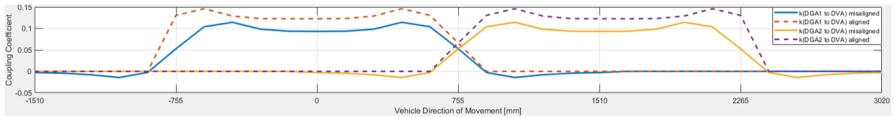
- Larger scale concrete embedded prototypes

DWPT System Developments

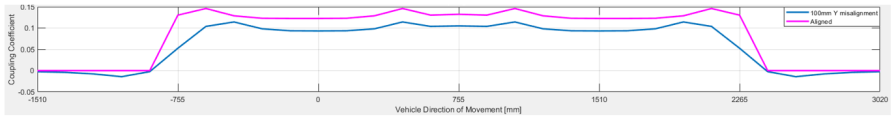
- Investigating feasibility of J2954 receivers for DWPT

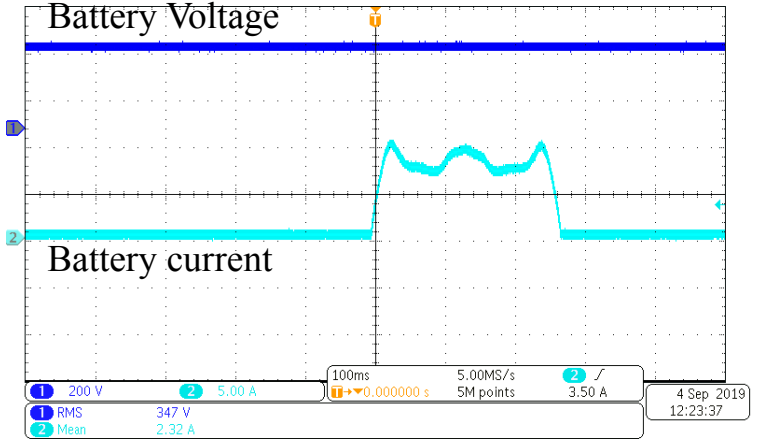


Individual Primary Pad to Secondary Pad Coupling profile at Z = 200mm



Total Primary pads to Secondary Pads Coupling profile at Z = 200mm

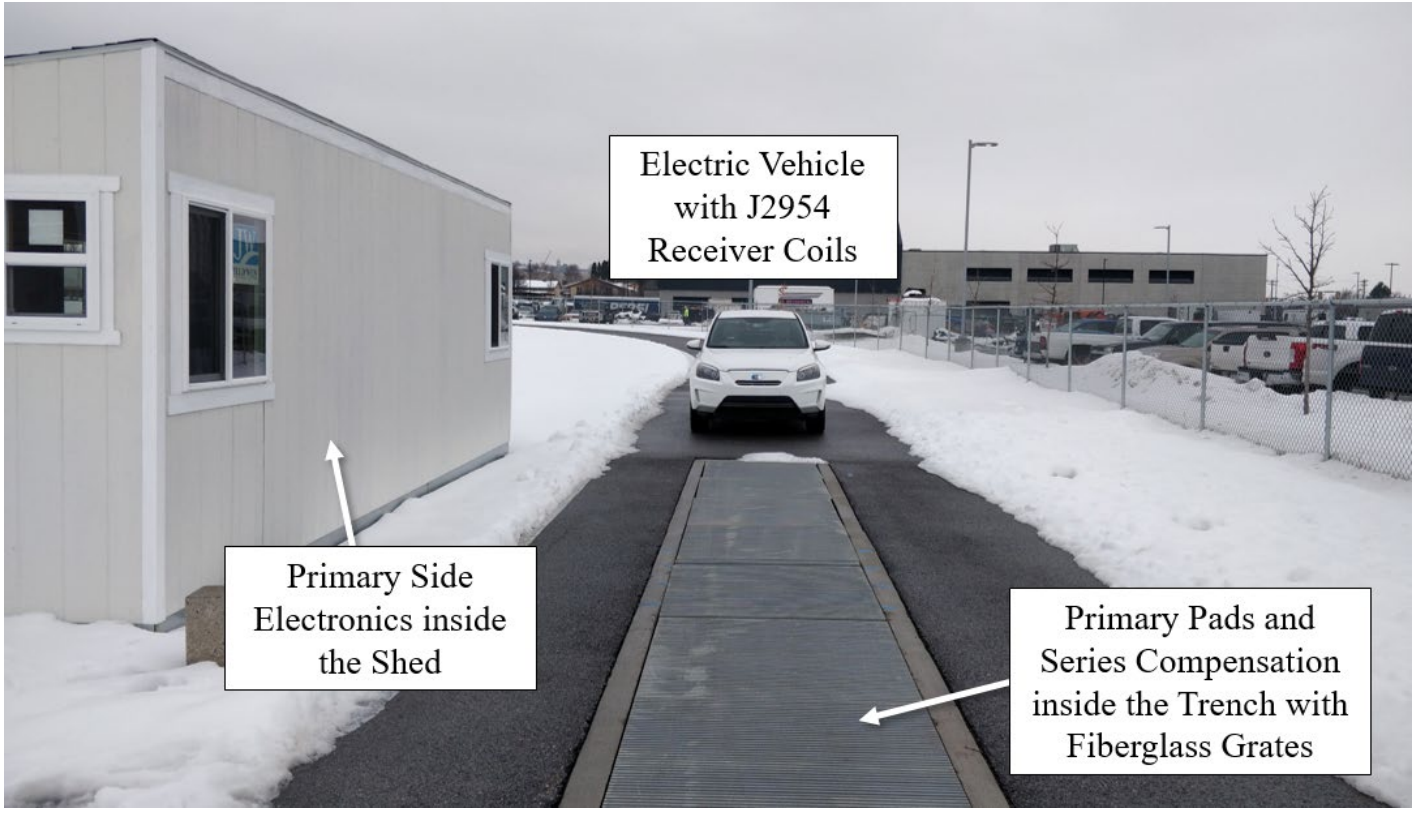




Open loop dynamic charging waveforms (3kW)

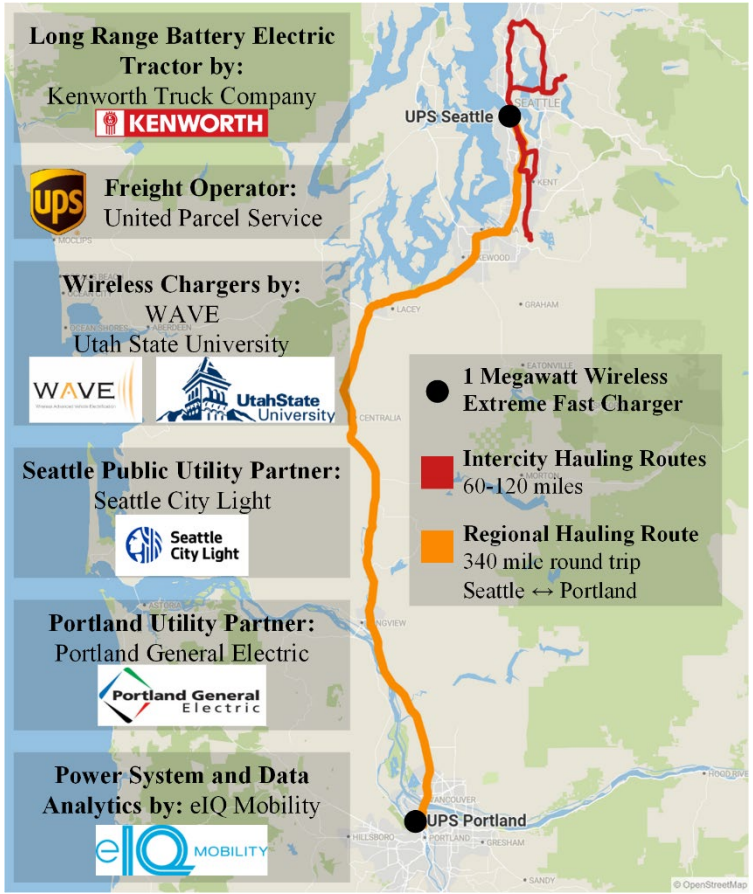
DWPT System Developments

- Outdoor system



High Power Stationary WPT System

- 1 MW wireless charging system for battery electric truck
  - Charging during breaks in regional and intercity hauling routes
  - Size, weight, air gap and thermals of WPT system being optimized
  - Converter topology being optimized to minimize conversion stages



Come visit us!

- We are located in Logan, UT – two hours north of Park City
- Open to collaborative research with universities and industry