Compound Motor Characteristics

Examine the relationship between speed and torque in compound motor connections.

Connect a DC motor to give a compound motor characteristic

\[ I_L = I_T \]

Series field flux depends on \( I_a \), \( I_a \) depends on load \( T \)

At high \( T_L \) series field produces significant \( \phi \)

Motor characteristic - shunt-like when \( T_L \) low

Motor characteristic - series-like when \( T_L \) High

Compound motors produce more torque/amp than shunt motors but have a definite no-load speed

Test Setup

Maintain 115V output

Dyno connected to as separately excited generator.
DISCUSSION POINTS
Experiment # 9

COMPOUND MOTOR CHARACTERISTICS

1. Explain how the compound motor connection is made.

2. Explain how the addition of the series and shunt coil fluxes changes the motors characteristics.

3. Explain how the field fluxes change in a compound motor as the mechanical load changes.

4. Refer to the data and graphs and explain how these support the theory presented.