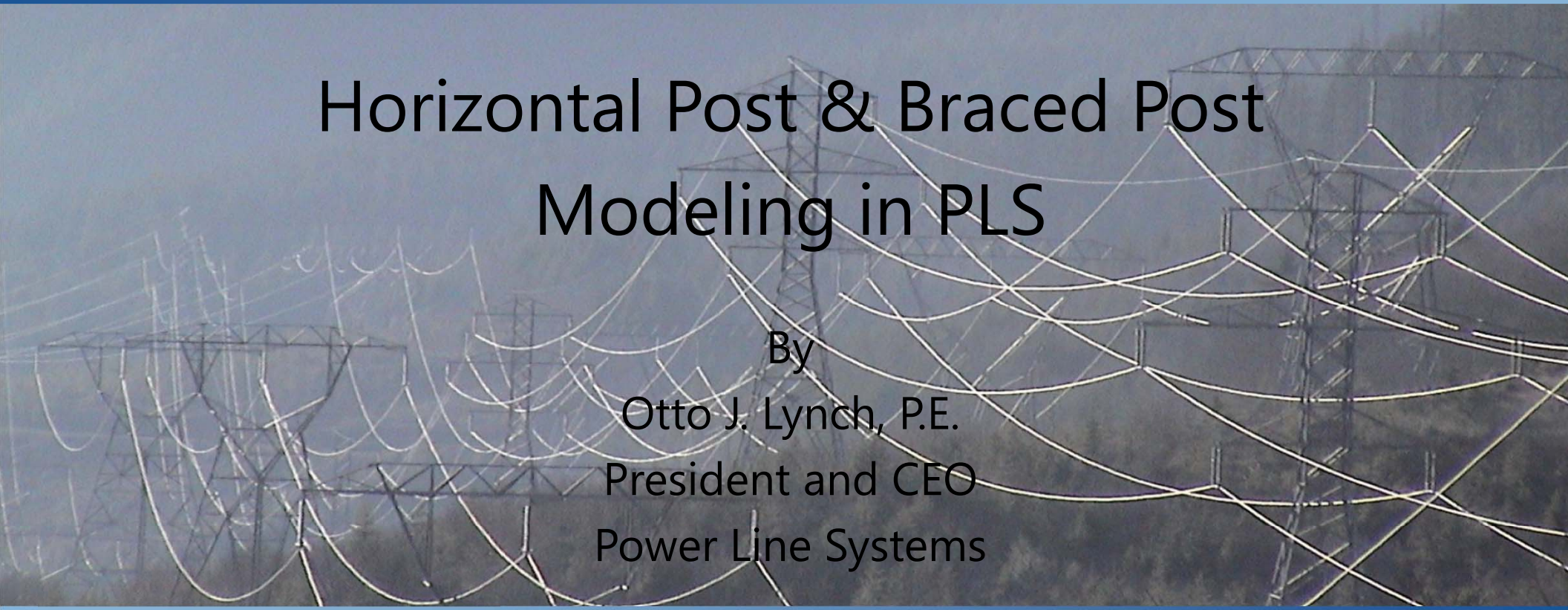

Horizontal Post & Braced Post Modeling in PLS

By
Otto J. Lynch, P.E.
President and CEO
Power Line Systems

Introduction

- Overhead Line Engineers Have Traditionally Used The ‘Ruling Span’(RS) Concept to Model Overhead Power Lines
- Due To Assumptions, Works Without Reported Design Issues
  - Clearance And Tension Calculations Will Be Inaccurate
- Ruling Span Has Known Limitations, Thus Finite Element (FE) Methods Are More Accurate
- FE Calculates Not Only More Accurate Sags (i.e. Clearances), But Also Exposes Longitudinal Imbalances
- No Issues When Using Suspension (And Strain Insulators), But Causes Issues for Post and Braced Post Insulators That Have Longitudinal Strength Capacities When Insulator and Structure Deflections Are Not Properly Considered

Live Presentation

Conclusions

- Flexibility is good! (See Braced Post Presentation from EPRI)
- Get Post and Braced Post Engineering Data From Your Manufacturer
- Get Post and Braced Post Flexibility From Your Manufacturer
- If They Can't Provide It, A Test is Very Easy
- Don't Forget Pole Flexibility!
- L3 is Close; Recommend Working in L3
- L4 is Perfect; Takes a Bit More Time
- Switch to L4 for "Final" Analysis (See FE Modeling Improvements Presentation from ATUG)

Horizontal Post & Braced Post Modeling in PLS

Questions?

Otto J. Lynch, P.E.
otto@powerlinesystems.com