

Topics for Today:

- Announcements
  - Last homework “Dispatch” due ~Fri this week.
  - Term Project final report due Fri Dec 15<sup>th</sup>.
  - Final Project presentations - Wed Dec 20<sup>th</sup> ` 1:45pm start. Coffee, juice, snacks.
  - Office: EERC 614. Phone: 906.487.2857
- Project Presentations (by local 6 projects)
  - Emphasize your project (Journal paper analysis in Appdx)
  - ~6 presentations in 2 hrs - 20 mins each including Q&A.
  - Provide .ppt handouts for audience (25 copies).
- Wrap-up of Stability (background for EE6210)
  - Changes in Transfer impedance due to faults, switching.
  - Equal area criterion for first-swing
  - Effect of reclosing strategies
- Connection of EE5200 to EE5223 - Power System Protection
  - Short circuit calcs: balanced and unbalanced
  - Protective devices, measure  $V(t)$ ,  $I(t)$ ,  $Z(t)$ , etc.
  - Must understand system planning & operations

**Topics for Today:**

- Announcements
  - Last homework “Dispatch” due ~Fri this week.
  - Term Project final report due Fri Dec 14<sup>th</sup>. (Extension to Mon 9am possible)
  - Final Project presentations - Wed Dec 19<sup>th</sup> 1:45pm start. Coffee, juice, snacks.
  - Office: EERC 614. Learning Center: Wed, Fri 4-6pm
- Project Presentations (by local 6 projects)
  - Emphasize your project (Journal paper analysis in Appdx)
  - ~6 presentations in 2 hrs - 20 mins each including Q&A.
  - Provide .ppt handouts for audience (25 copies).
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- Connection of EE5200 to EE5223 - Power System Protection
  - Short circuit calcs: balanced and unbalanced
  - Protective devices, measure  $V(t)$ ,  $I(t)$ ,  $Z(t)$ , etc.
  - Must understand system planning & operations

Time: Finals Week

Wednesday, Dec 20th - 12:45 - 2:45pm

Room: DOW 642

Allocated Time: ~15-20 minutes per presentation; 2-4 mins between

Start Time	Team Members	Topic
?	Zhiyuan Yang Yinqi Wang	Risk-based Contingency Analysis Using Monte Carlo Simulation Method
	Shiena Kundu Amit Sabu	Compensation techniques for reactive power control in transmission systems.
	Mohamed Hassan** Ayodeji Amoo**	Techniques for reducing total harmonic distortion (THD) on low and high voltage systems by analyzing and utilizing active/passive methods.
?	Vivek Vyasraj Sorab Madhur Arun Jagtap	Effects of dynamics of PV generation on Power Systems.
	Kara Eshelman** Mohammed A. Hossain**	Effects of series capacitors in transmission lines
	Apeksha Manekar Vaibhavi Tharval	Power factor correction and reduction of voltage fluctuation in microgrid
?	Eric Monte* Britton Borlace*	Transmission Line Protection through the use of Lighting Arrestors
?	Sreenivasulu Kamma Renu Anvesh Maddi	Active Power Flow Control using the Phase Shift Transformer and TCSC comparison
?	Mohammad Asif Iqbal Khan* Aashay Thatte	Data-driven modeling of a renewable energy powered micro-grid at Michigan Tech Campus
	Harshada Gaikwad Saurabh Singh	Lightning transient effect on transmission line.
	Nikunj Mathukiya Raakesh Raja Ramachandran	To study the analysis of fault current for the selection of the rating of different circuit breakers
	Vishal Arya Ashwin Pathak	Modelling and analysis of Lightning Arrestors for use in Distribution substations
	Yashdeep Datta Rushikesh Kadam	Impact of Distributed Generation over Transmission line & Distribution network (study power system attributes)
?	Praveen Iyer Mudit Kumar	Evaluating the performance of Transmission line with UPFC through simulation
	Narendra Raghav Arun Varkey Malppan	Application of phase shifting transformers(PST) in electrical networks
	Devalkumar Thakar Aakash Revdiwala	Comparison between two fault detection methods in transmission line: Two-Terminal Transmission Line Fault Location Using Traveling Waves and combination of impedance based method and voltage sage matching.
	Micheal Tracy**	Remediation of VAR deficiency on a small islanded grid with limited generation

\*Stands for On-Campus On-line Student

\*\*Stands for Off-Campus On-line Student

- .ppt on memory stick
- software

### Format: (20 mins)

- Intro / Motivation (1 min)
  - Background (5 min)
  - Info / case
    - Theory / Concepts (Refs, Journ. Pap)
    - Weaknesses in existing approaches
  - Development & Implementation
  - Results
  - (Conclusions - Technical.) (2 mins)
  - Recommendations (2 mins)
- } (12 mins)

→ Conclusions (Not a Summary!)

- If.... then.....
- Quantitative observations, "rules"
- Be specific - sensitivities

Summary  
- Recy.

- Recommendations based on this work.
- Recommendations for further work

## → Exec Summary (Abstract)

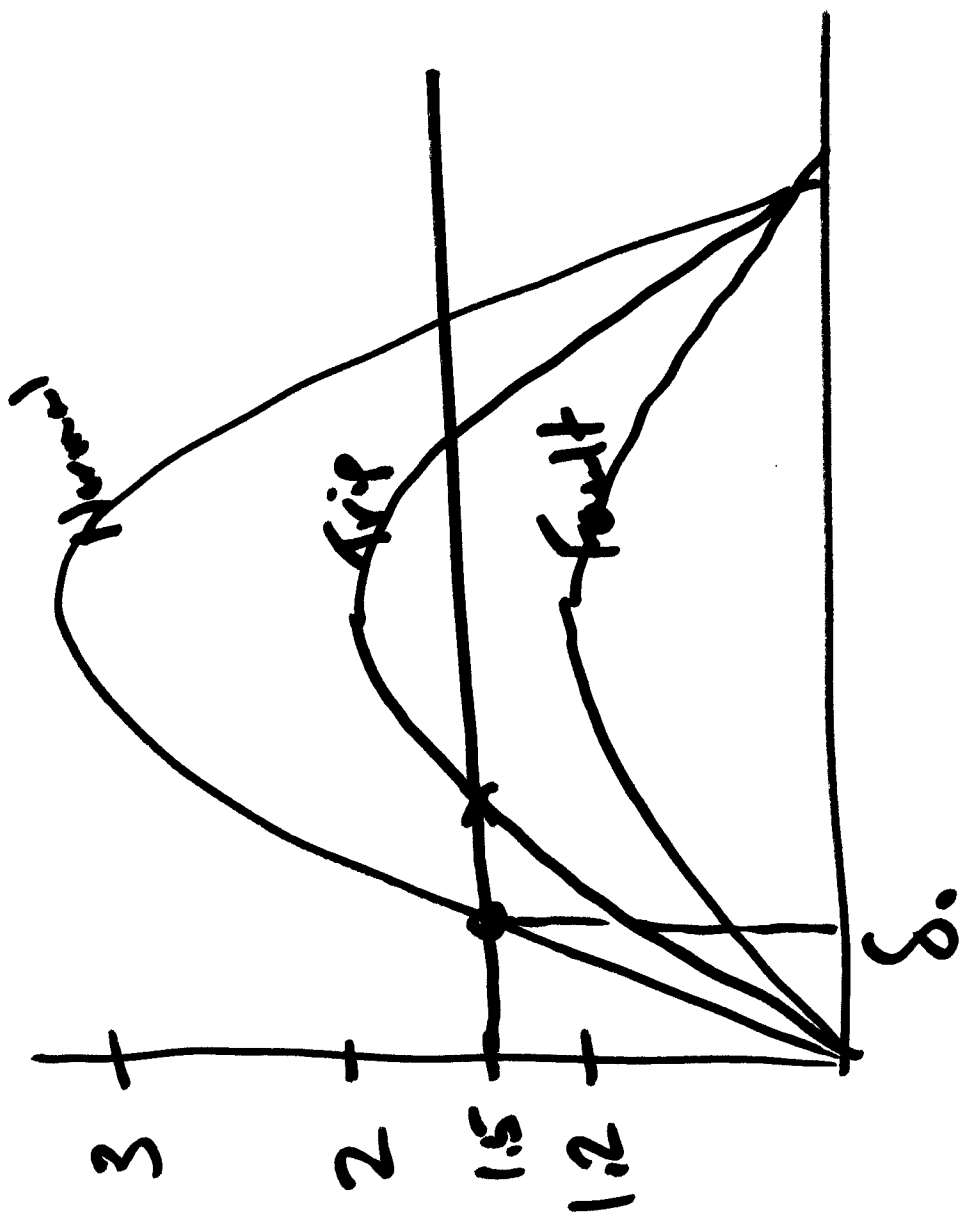
- Prob, Motivation, Context

- Work performed

- Results

Conclusions

Recommendations



$$Z_{XFR} = j.333$$
$$V_{TH} = .333 \text{ p.u.}$$

Fault

$$P_{max} = \frac{(1.2)(.333)}{.333} = 1.2 \text{ p.u.}$$

$$Z_{XFR} = j0.6 \text{ p.u.}$$

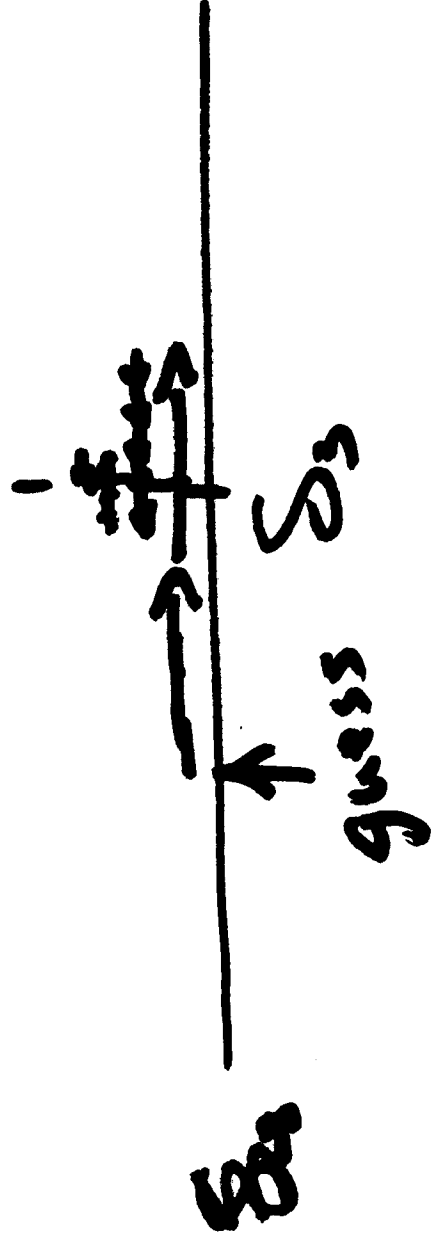
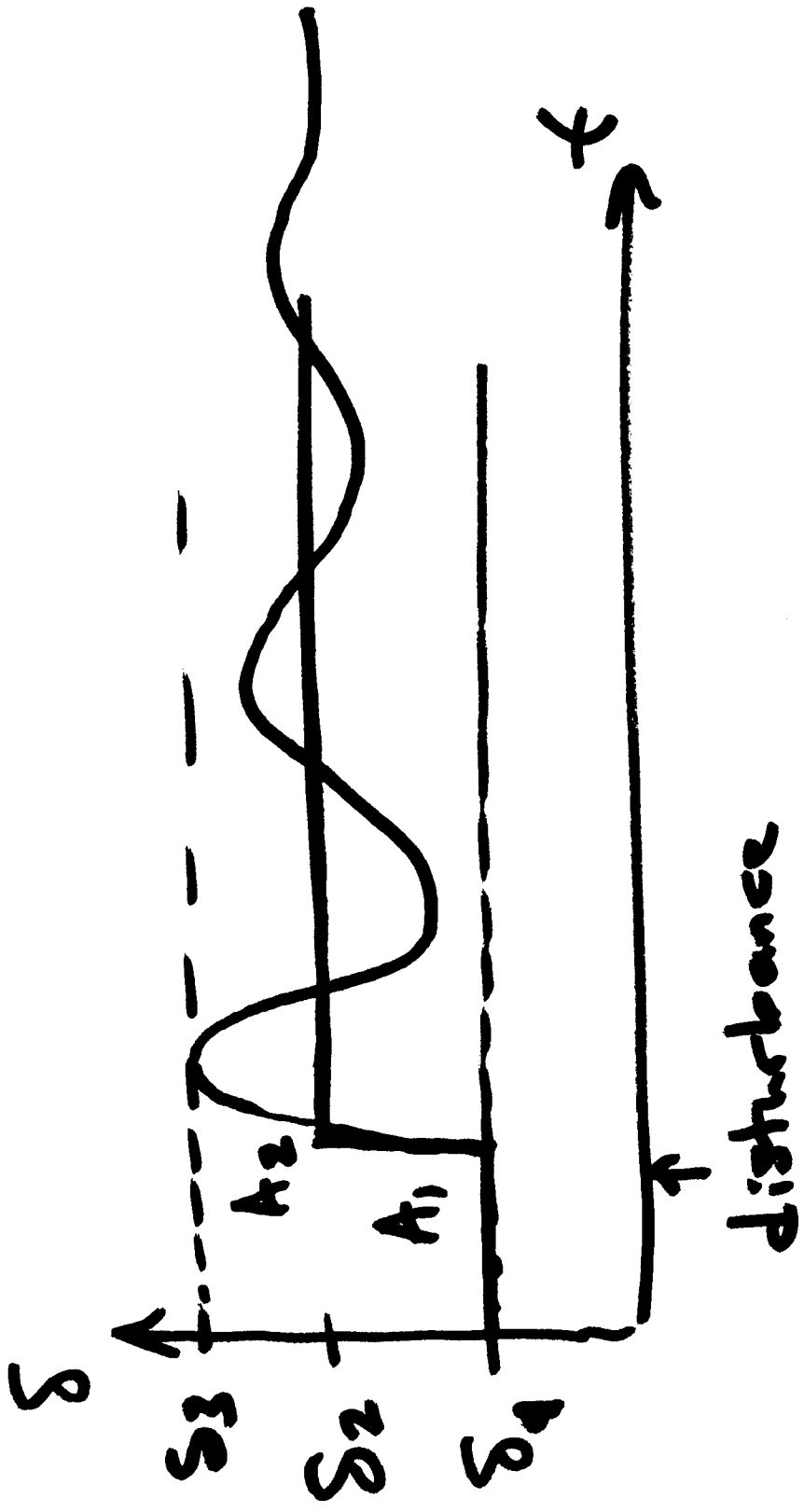
$$V_{TH} = 1.0$$

$$P_{max} = \frac{(1.2)(1.0)}{j.6} = 2.0 \text{ p.u.}$$

Tie Line

Trips





# COHERENT MACHINES

