ECE 504

POWER SYSTEMS
STABILITY II

SESSION no. 24
Voltage Stability is not as well understood as transient stability.
What?

How is it diff.?

1) Not much reactive power.
2) Loss of power in line, reactive power.
* droop char

[Diagram]

load:

\[ R + j \omega L \]

\[ R - j \frac{1}{\omega C} \]
Real power
The flow
of energy

Input: 
Output:

\[ \text{Input} + \text{Output} = \text{Total} \]
Small Signal

\( g_0 \)

\( \text{Swing} = \bar{V} \)

\( \text{real power} \)

\( \text{mod} 1024 \)
open the breaker the m/c slows down.

\[ \frac{r_2}{s} \]

normally \( s \) is small

0.002 \( \frac{\text{f/s}}{} \)
\[ S \text{ is large} \quad \frac{r_2}{5} = 1 \]

00.04 50.06
\[ V = E_s \]

\[ Z L \| L = \frac{Z L_1}{N^2} \]

Voltage collapses