

A

Single Machine System

The simulations in Chapter 5 use the parameters below, which are partly taken from the test system in Chapter 6.

| | | |
|--------------|------------|-----------------|
| S_{base} | 0.88 MVA | $\equiv 1$ p.u. |
| U_{base} | 3.85 kV | $\equiv 1$ p.u. |
| H | 3.8 s | |
| $X'_d + X_t$ | 7 Ω | 0.42 p.u. |
| X_{tl} | 3 Ω | 0.18 p.u. |

The operating point used at the field test was

| | | |
|-------|--------|-----------|
| P_g | 0.4 MW | 0.45 p.u. |
| Q_g | 0 Mvar | 0 p.u. |

Assuming that

| | | |
|-----|---------|--------|
| V | 3.85 kV | 1 p.u. |
|-----|---------|--------|

gives

| | | |
|------------|---------|-----------|
| δ | 15.3° | |
| θ | 4.6° | |
| E' | 3.92 kV | 1.02 p.u. |
| V_∞ | 3.86 kV | 1.0 p.u. |

The switched load was

| | | |
|------------|-------|------------|
| P_{load} | 20 kW | 0.023 p.u. |
|------------|-------|------------|

