

# What to Do when Things Go Wrong!

Frank McKenna

OpenSees Users Workshop  
Berkeley, CA  
August 26, 2006

Sponsored by the National Science Foundation  
through the Pacific Earthquake Engineering Research Center  
and through NEESit



# **CHECK YOUR MODEL**

---

**CHECK YOUR MODEL**

# Commands that Return Values

---

- analyze command

The analyze command returns 0 if successful.  
It returns a negative number if not

*set ok [analyze numIter <Δt>]*

- getTime command

The getTime command returns pseudo time in Domain.

*set currentTime [getTime]*

- nodeDisp command

The nodeDisp command returns a nodal displacement.

*set disp [nodeDisp node dof]*

# Example Usage – Displacement Control

---

```
set maxU 15.0; set dU 0.1
constraints transformation
numberer RCM
system BandGeneral
test NormDispIncr 1.0e-6 6 2
algorithm Newton
integrator DispControl 3 1 $dU
analysis Static
set ok 0
set currentDisp 0.0
while {$ok == 0 && $currentDisp < $maxU} {
    set ok [analyze 1]
    if {$ok != 0} {
        test NormDispIncr 1.0e-6 1000 1
        algorithm ModifiedNewton -initial
        set ok [analyze 1]
        test NormDispIncr 1.0e-6 6 2
        algorithm Newton
    }
    set currentDisp [nodeDisp 3 1]
}
```

# Example Usage – Transient Analysis

---

```
set tFinal 15.0;
constraints Transformation
numberer RCM
system BandGeneral
test NormDispIncr 1.0e-6 6 2
algorithm Newton
integrator Newmark 0.5 0.25
analysis Transient
set ok 0
set currentTime 0.0
while {$ok == 0 && $currentTime < $tFinal} {
    set ok [analyze 1 0.01]
    if {$ok != 0} {
        test NormDispIncr 1.0e-6 1000 1
        algorithm ModifiedNewton –initial
        set ok [analyze 1 0.01]
        test NormDispIncr 1.0e-6 6 2
        algorithm Newton
    }
    set currentTime [getTime]
}
```

# Segmentation Faults, etc:

---

- Email: [fmckenna@ce.berkeley.edu](mailto:fmckenna@ce.berkeley.edu)
- Bugzilla: <http://opensees.berkeley.edu/bugzilla/index.cgi>

NOTE: Zip up your files in **1** directory and send them to us