

SMART Rebar for Damage Detection of Reinforced Concrete Structures

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MOTIVATION

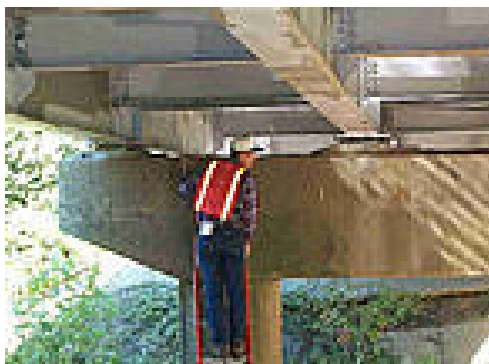


Column shear failure



Beam-column failure

- **Steel RC widely used**
- **Prone to damage**
- **Bond deterioration and yielding**



Visual

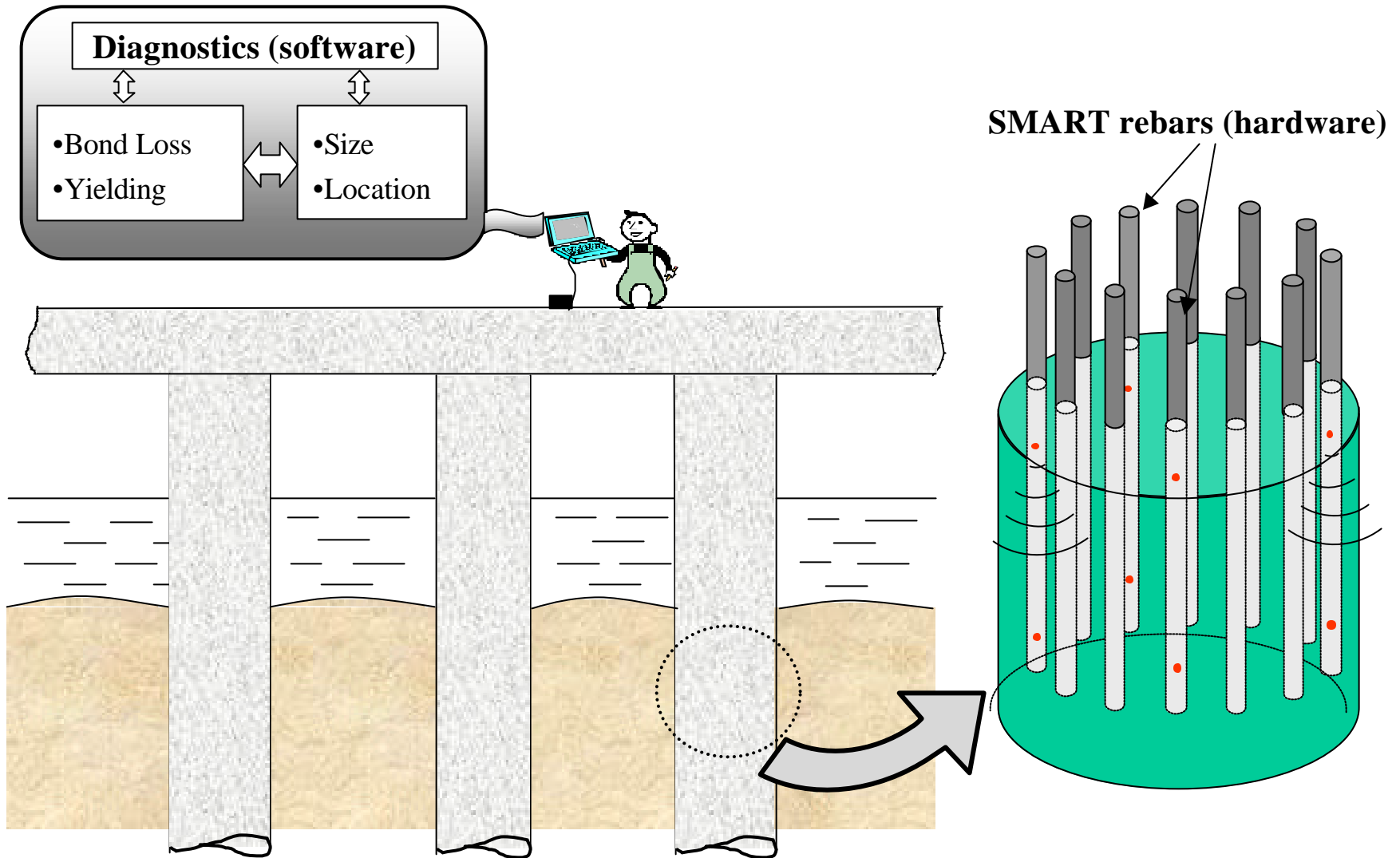


Impact Echo

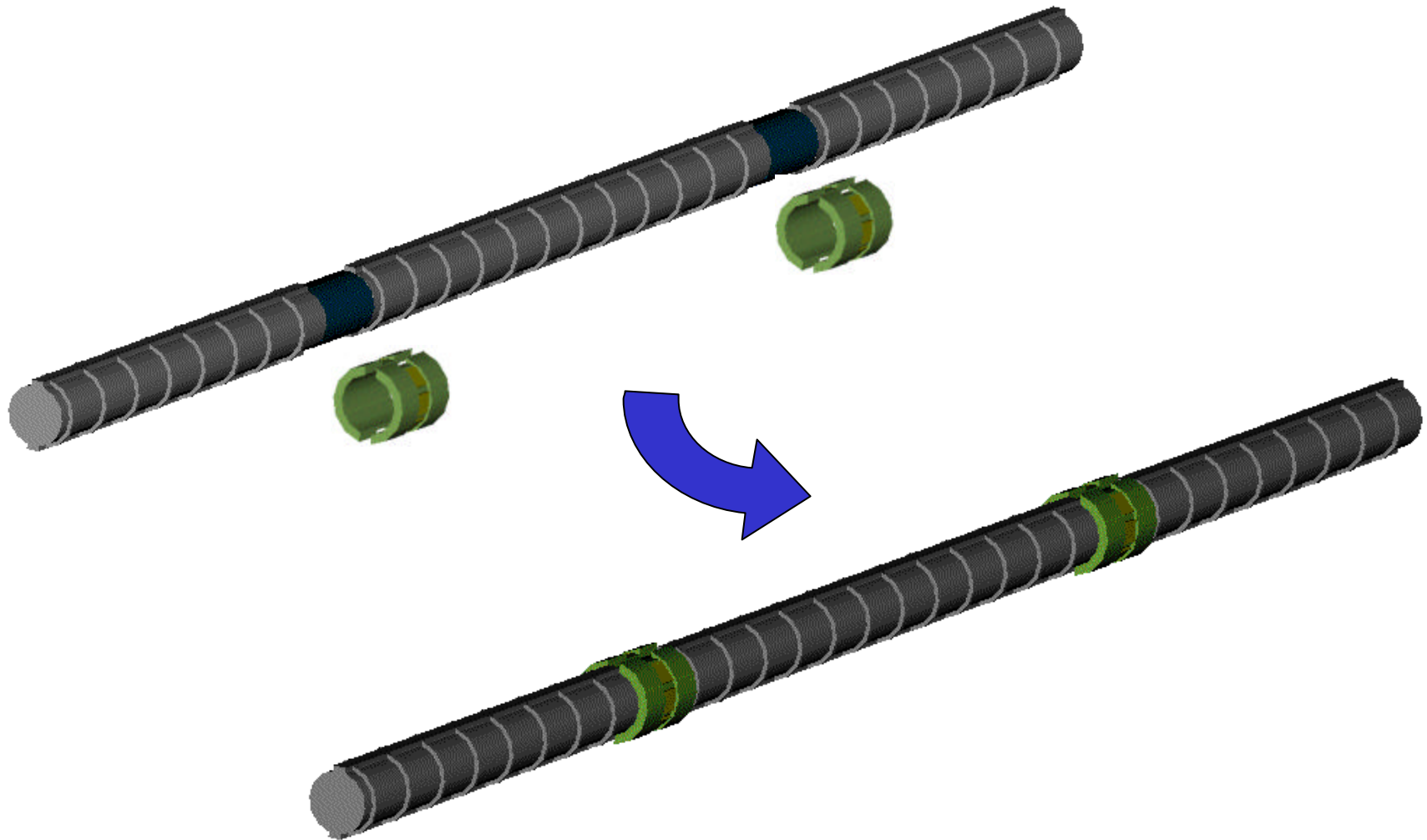
Current inspection techniques are:

- **Slow**
- **Labor-intensive**
- **Unsafe**
- **Limited to accessible areas**

Built-in Active System

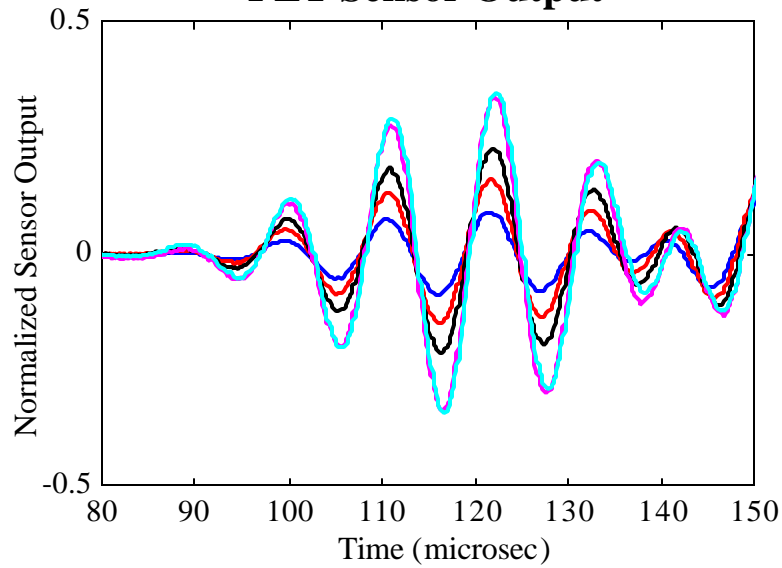


SMART Rebar

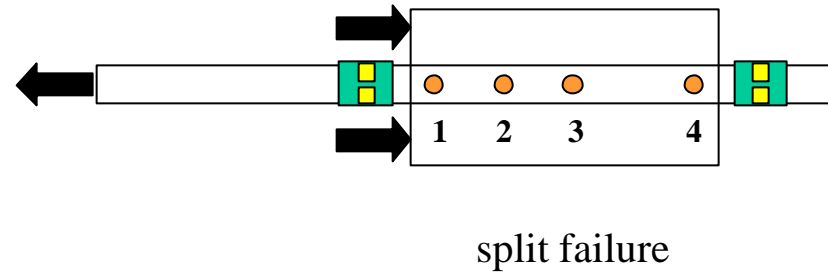
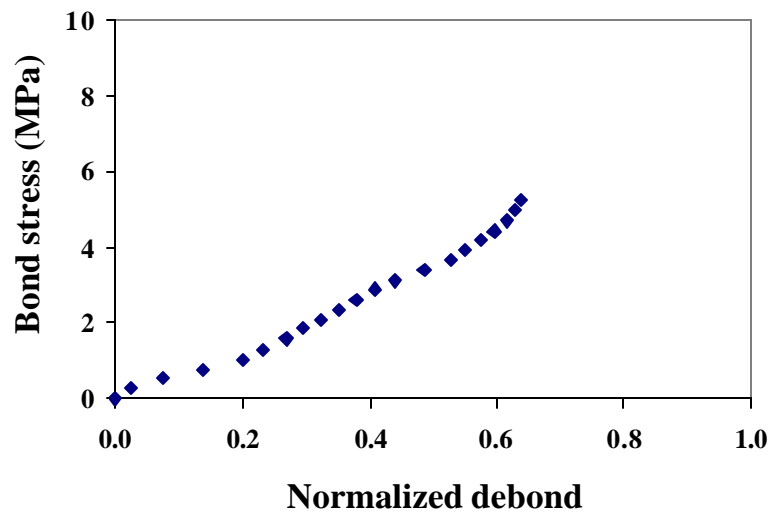
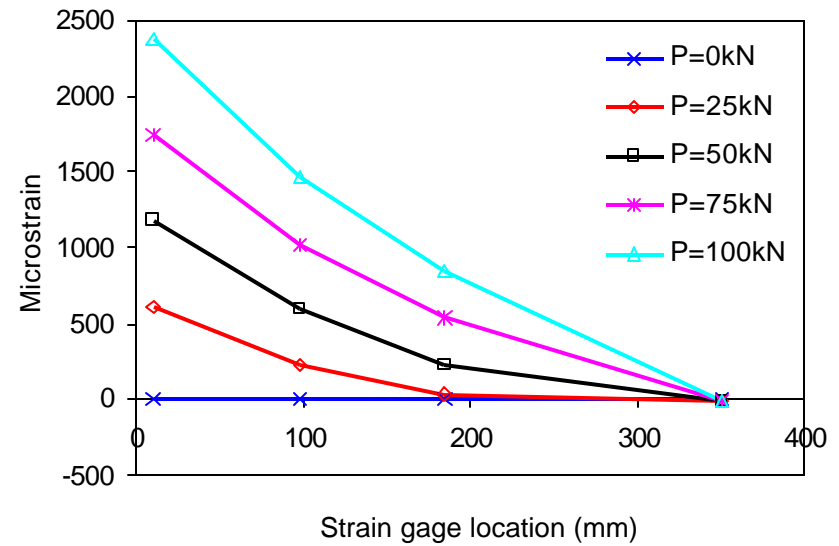


Pullout Test

PZT Sensor Output

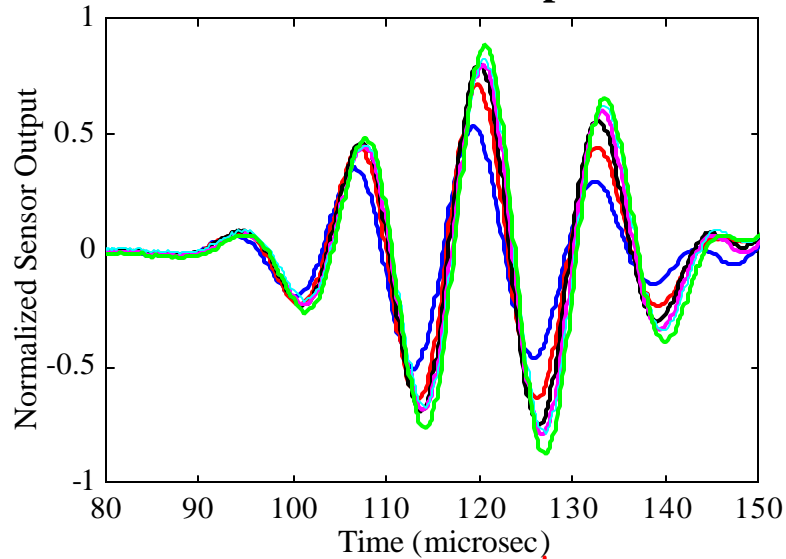


Strain Gage Data

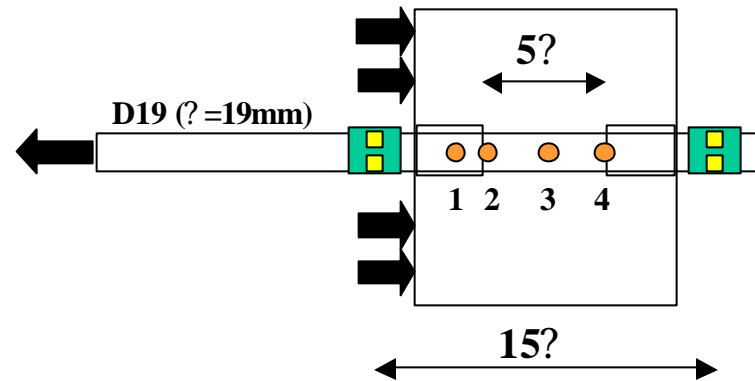
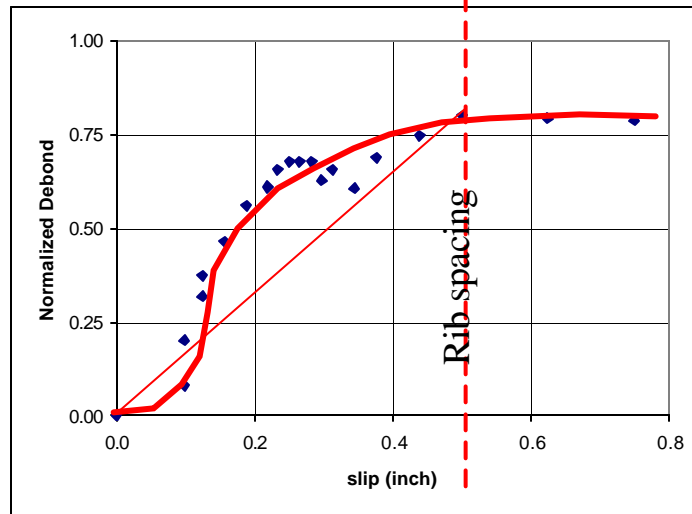
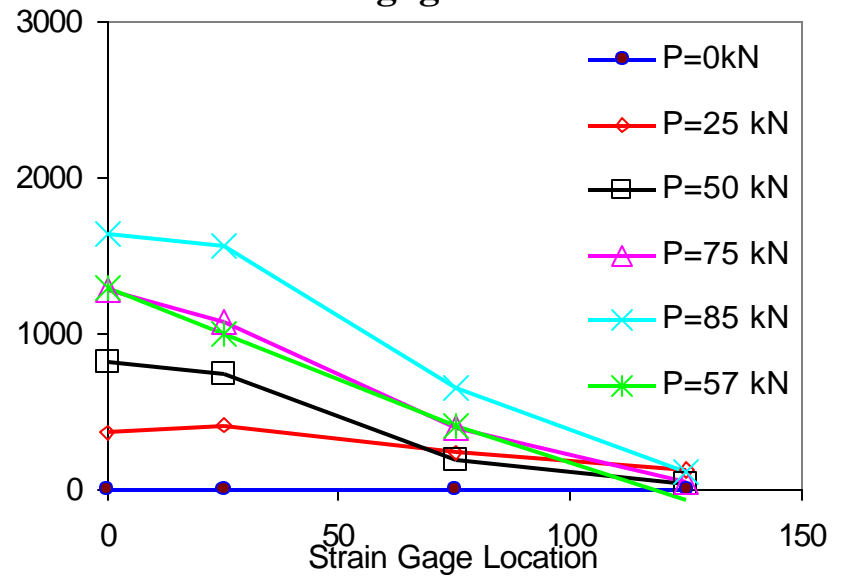


Pullout Test

PZT Sensor Output



Strain gage data



Yield Monitoring

