**Dan Baima 10/5/14**

**Health Monitoring of Suspension Bridge Cables**

**Research**

General Clairborne Pell (Newport Bridge) Info:

Suspension Bridge with Deck Truss Approaches

Constructed 1966-1969 by  [Parsons, Brinckerhoff, Quade & Douglas company](http://en.wikipedia.org/wiki/Parsons_Brinckerhoff" \o "Parsons Brinckerhoff).

Total Length: 11,248ft

Width: 48ft

Main Span Length: 1,600ft

Height: 400ft (Towers) 200+ Ft Ship Clearance, 216ft Max Road Height

Traffic: 27,000 Daily

<http://shm.cs.illinois.edu/Full%20Scale%20Papers/5.%20Jang%20et%20al.%202010%20Deployment%20and%20Evaluation.pdf>

“Structural health monitoring of a cable-stayed bridge using smart sensor technology: deployment and evaluation”

* Wireless Smart Sensor Networks, using software from Illinois Structural Health Monitoring Project Services Toolsuite.
* Jindo Bridge, South Korea
* Largest deployment of wireless smart sensors to date
* Utilizes solar charging

<http://proceedings.spiedigitallibrary.org/proceeding.aspx?articleid=982652>

”Dynamic monitoring of structural health in cable-supported bridges”

* Hong Kong Highways Department , Polytechnic University
* 900 sensors (accelerometers, strain gauges, displacement transducers, level sensing, weight-in-motion sensors)
* Doesn’t seem like much on cables

<http://www.hindawi.com/journals/tswj/2014/689471/>

* Recently built Zhijiang Bridge over the Hangzhou Qiantang River, China.
* Comprehensive Bridge Monitoring System (not specific to cables, but includes many sensors)
* Seems like a class report…not the best

<http://www.turnto10.com/story/26155222/a-newport-bridge-view-youll-see-only-on-10>

Video of News Crew going up Newport Bridge

(<http://en.wikipedia.org/wiki/Guyue_Bridge>) cool 800 year old stone bridge in China