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# Experimental cavern movements

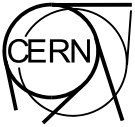
## 2<sup>nd</sup> HL-LHC PLC meeting

25.09.2012

A. Behrens, J.-C. Gayde, D. Mergelkuhl

BE/ABP/SU-EM

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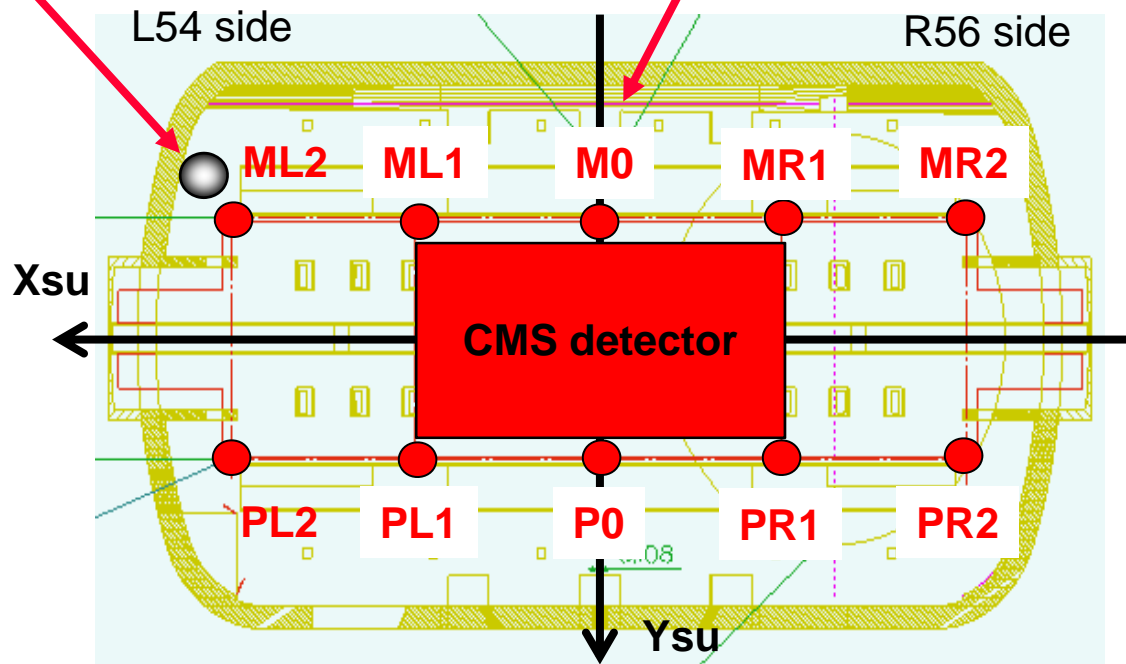
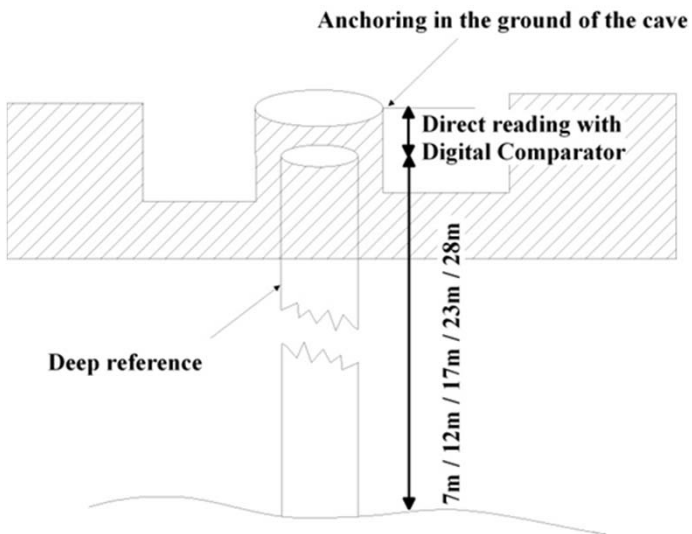
# CMS Stability: Deep references and cavern floor points

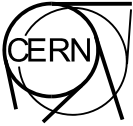


Reference:  
5 deep references



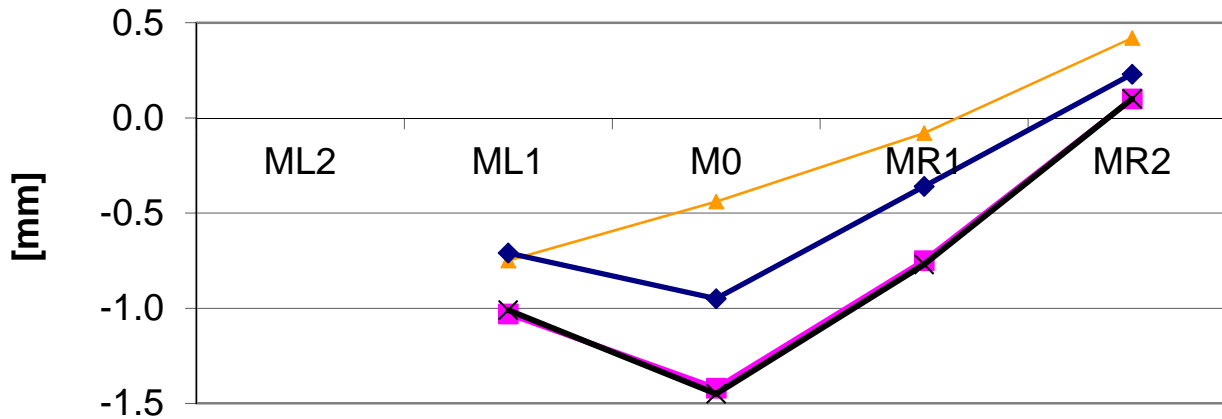
10 Floor points





# CMS Stability: Cavern floor leveling

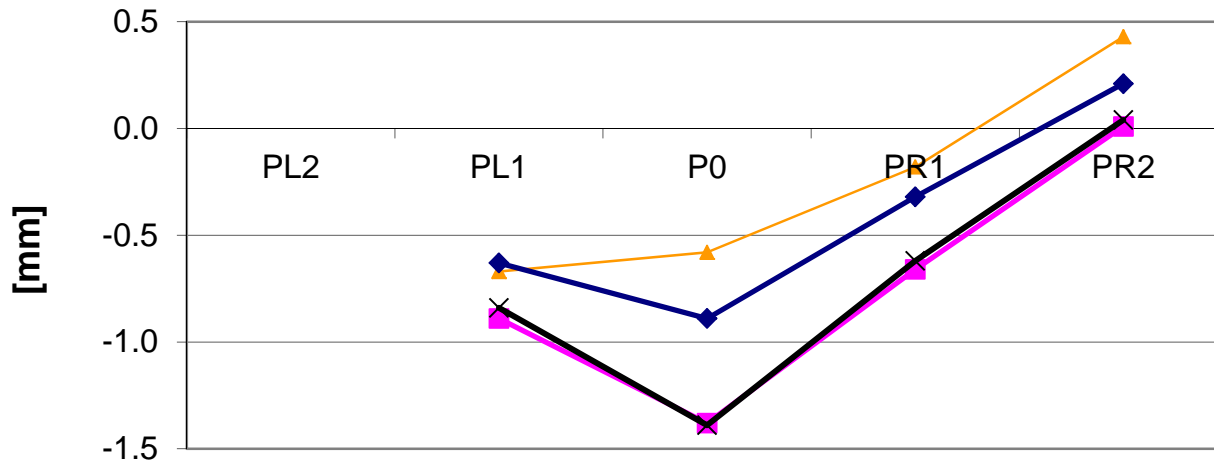
## FLOOR POINTS FAR SIDE



**JAN 2008**  
**Total load 14600t**

## L54 Side

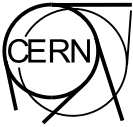
## R56 Side



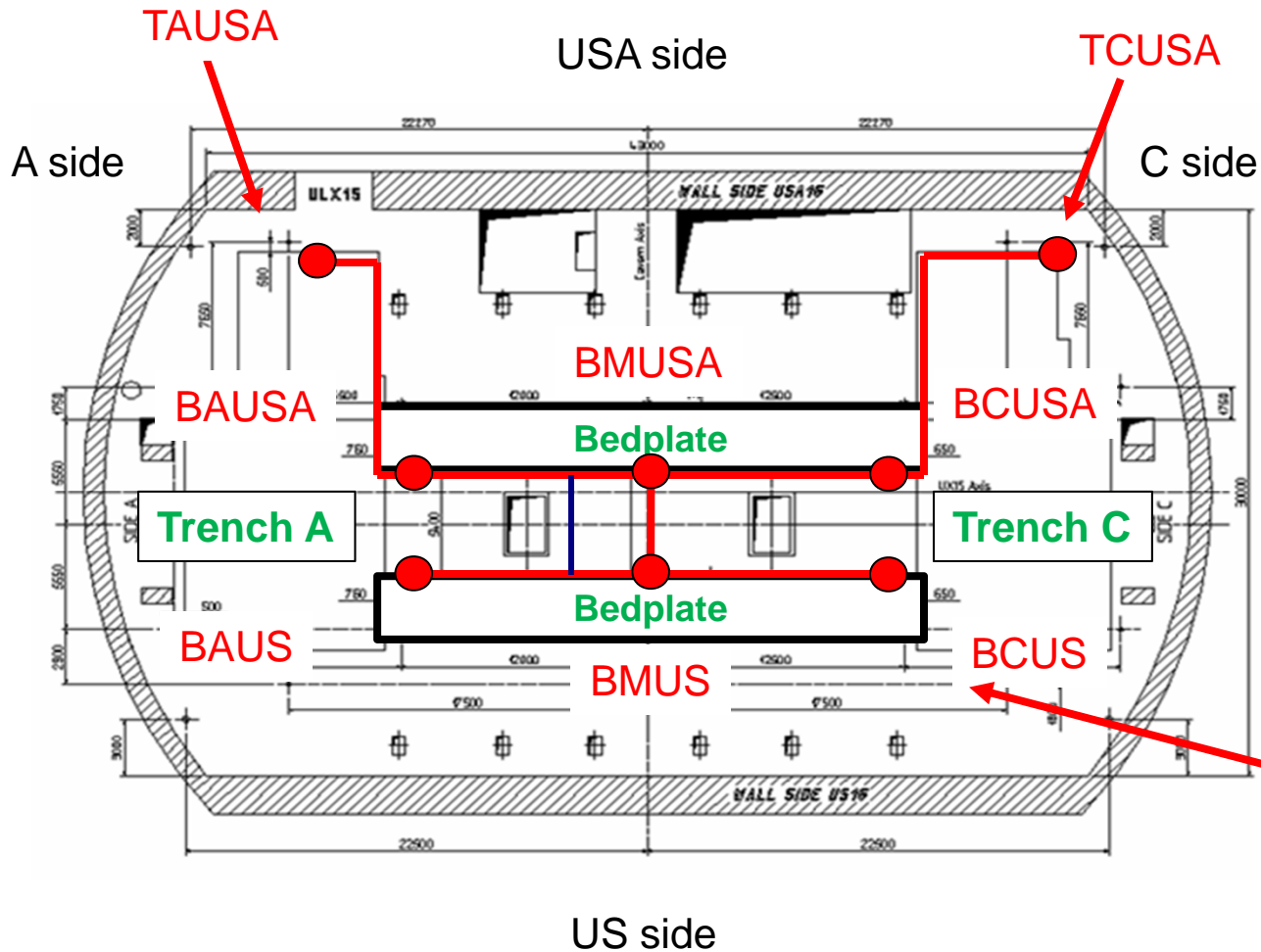
—▲— JAN 2008 - MARCH 2007  
—◆— MARCH 2009 - MARCH 2007  
—■— FEB 2011 - MARCH 2007  
—×— FEB 2012 - MARCH 2007

**No significant movement downwards of floor points during last year!**

## FLOOR POINTS NEAR SIDE



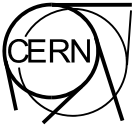
# ATLAS Stability – HLS points on bedplates



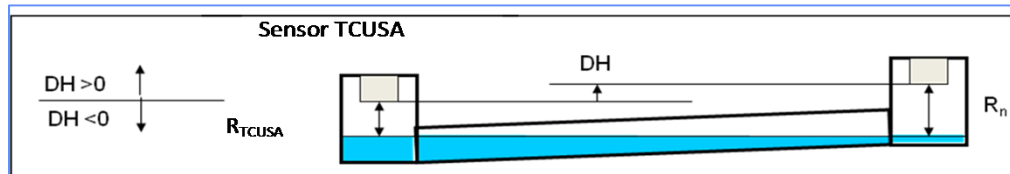
Reference:  
2 HLS points



6 HLS points on the  
Bedplates



# ATLAS Stability – HLS system



**Max. movement upwards  
of 0.6mm  
during last 2 years!**

**VARIATION OF DIFFERENCES IN HEIGHT  
OF HLS SENSORS  
FROM 20 NOV 2009 TO 21 AUG 2012**

