

Session 2: Large systems							
Speaker	Exp.	Detector	Operation	Gas	Irradiation	"Aging effects"	Remedy
B. Betev	L3	Vertex drift chamber, TEC	LEP: 11 years	CO <sub>2</sub> / Isobutane 80:20	10 <sup>-4</sup> C/ cm	none	No background, clean gas system
D. Bailey	Zeus	Central tracker, DC	HERA: 1992 - 1997 HERA: 1998 - 2000	Ar / CO <sub>2</sub> / C <sub>2</sub> H <sub>6</sub> 83:5:12 + 0,5% Ethanol + H <sub>2</sub> O	8 years of operation	none HV trips not correl. to beam	Add some H <sub>2</sub> O
C. Niebuhr	H1	2 central jet chambers; inner CJC1, outer CJC2	HERA: 1992 - 1993 HERA: 1994 - 1995 HERA: 1996 - 1997 HERA: 1998 - 2000	Ar / C <sub>2</sub> H <sub>6</sub> 50:50 + 0,1% H <sub>2</sub> O		48 broken wires in CJC 1 due to corrosive remnants in crimp parts; nothing in CJC2 none Gain drop in CJC2; deposits on sense wires. ΔT=15 °C Increased chamber currents: "Malter" effect	New wires for CJC1 New sense wires for CJC2: gas distribution Replace H <sub>2</sub> O by 0,8% Ethanol
T. Marshall	D0	Central Muon: prop. drift tubes Forward Muon: stainless steel tubes " " Muon: mini drift tubes	Fermilab: 'Run I ' Fermilab: 'Run I ' Test tubes Fermilab: 'Run II '	Ar / Freon / CO <sub>2</sub> 90:6:4 CF <sub>4</sub> / CH <sub>4</sub> 90:10 CF <sub>4</sub> / CH <sub>4</sub> 90:10 Ar / Freon / CH <sub>4</sub> 84:8:8	1st year  5 C/ cm	Inefficient cells; outgassing of pads gives sheath of crud none none	Clean wires in place by heating quickly  double gas flow
M. Binkley	CDF	Central tracking CTC Central tracking prototype Gas monitors with <sup>90</sup> Sr Central tracking COT	Fermilab: 'Run I '  Fermilab: 1995-2000 Fermilab: 'Run II '	Ar / C <sub>2</sub> H <sub>6</sub> 50:50 + 1% alcohol  Ar / C <sub>2</sub> H <sub>6</sub> 50:50 + 1% alcohol	0,05 C/ cm 0,4 C/ cm	Gain drop up to 1000 % / C/ cm; deposits on wires none Gain drop up to 100k % / C/ cm; deposits on wires Gain drop < 5 % / C/ cm	Cleaning of gas system, add Cu-wool filters, reduce alcohol