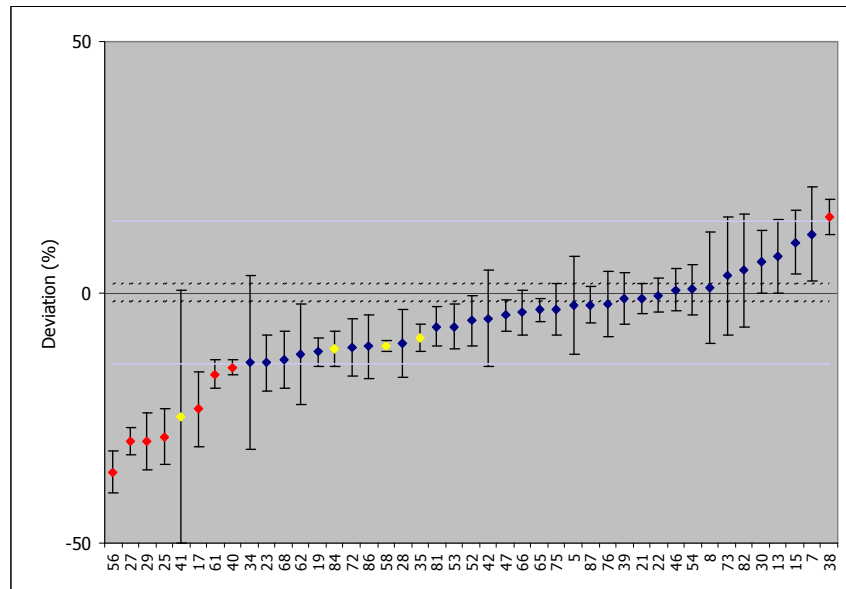


# GL and GH samples 2009



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# Radionuclides in GL and GH

8 nuclides:

$^{60}\text{Co}$ ,  $^{65}\text{Zn}$ ,  $^{85}\text{Sr}$ ,  $^{125}\text{Sb}$ ,  $^{133}\text{Ba}$ ,  $^{134}\text{Cs}$ ,  $^{137}\text{Cs}$  and  $^{152}\text{Eu}$

Participants:

GL            50            (2008: 55)

GH            40            (2008: 44)

# 'False' positives

## GL

$^{40}\text{K}$	2	(background)
$^{57}\text{Co}$	1	( $^{152}\text{Eu}$ )
$^{125}\text{I}$	1	( $^{125}\text{Sb}$ )

## GH

$^{113}\text{Sn}$	1	(?)
$^{125}\text{I}$	1	( $^{125}\text{Sb}$ )
$^{129}\text{I}$	1	(X-ray from $^{152}\text{Eu}$ ?)

# GL composition (Bq kg<sup>-1</sup>)

	NPL	Labs	<i>t</i> -test	Ratio
<sup>60</sup> Co	<b>5.035(12)</b>	5.05(4)	0.39	1.00
<sup>65</sup> Zn	<b>5.50(4)</b>	5.63(5)	2.07	1.02
<sup>85</sup> Sr	<b>7.01(5)</b>	7.18(6)	2.19	1.02
<sup>125</sup> Sb	<b>1.366(7)</b>	1.372(24)	0.25	1.00
<sup>133</sup> Ba	<b>3.571(25)</b>	3.44(3)	<b>-3.31 D</b>	0.96
<sup>134</sup> Cs	<b>14.02(10)</b>	13.15(7)	<b>-7.12 D</b>	0.94
<sup>137</sup> Cs	<b>4.47(3)</b>	4.59(4)	2.53	1.03
<sup>152</sup> Eu	<b>1.789(12)</b>	1.773(23)	-0.61	0.99

# GH composition (Bq g<sup>-1</sup>)

	NPL	Labs	<i>t</i> -test	Ratio
<sup>60</sup> Co	<b>5.418(12)</b>	5.36(3)	-1.67	0.99
<sup>65</sup> Zn	<b>5.92(4)</b>	5.92(4)	0.04	1.00
<sup>85</sup> Sr	<b>7.54(5)</b>	7.60(5)	0.82	1.01
<sup>125</sup> Sb	<b>1.470(7)</b>	1.438(12)	-2.34	0.98
<sup>133</sup> Ba	<b>3.84(3)</b>	3.76(3)	-2.35	0.98
<sup>134</sup> Cs	<b>15.09(11)</b>	14.51(9)	<b>-4.11 D</b>	0.96
<sup>137</sup> Cs	<b>4.81(4)</b>	4.89(3)	1.73	1.02
<sup>152</sup> Eu	<b>1.925(13)</b>	1.901(13)	-1.30	0.99

## GL and GH in agreement (%)

	GL	GH
$^{60}\text{Co}$	<b>82</b> (69)	<b>73</b> (70)
$^{65}\text{Zn}$	<b>74</b> (-)	<b>60</b> (-)
$^{85}\text{Sr}$	<b>64</b> (-)	<b>68</b> (-)
$^{125}\text{Sb}$	<b>56</b> (-)	<b>73</b> (-)
$^{133}\text{Ba}$	<b>84</b> (71)	<b>65</b> (57)
$^{134}\text{Cs}$	<b>72</b> (65)	<b>63</b> (68)
$^{137}\text{Cs}$	<b>88</b> (76)	<b>78</b> (68)
$^{152}\text{Eu}$	<b>58</b> (69)	<b>68</b> (55)

(x) refers to 2008 values

# Results

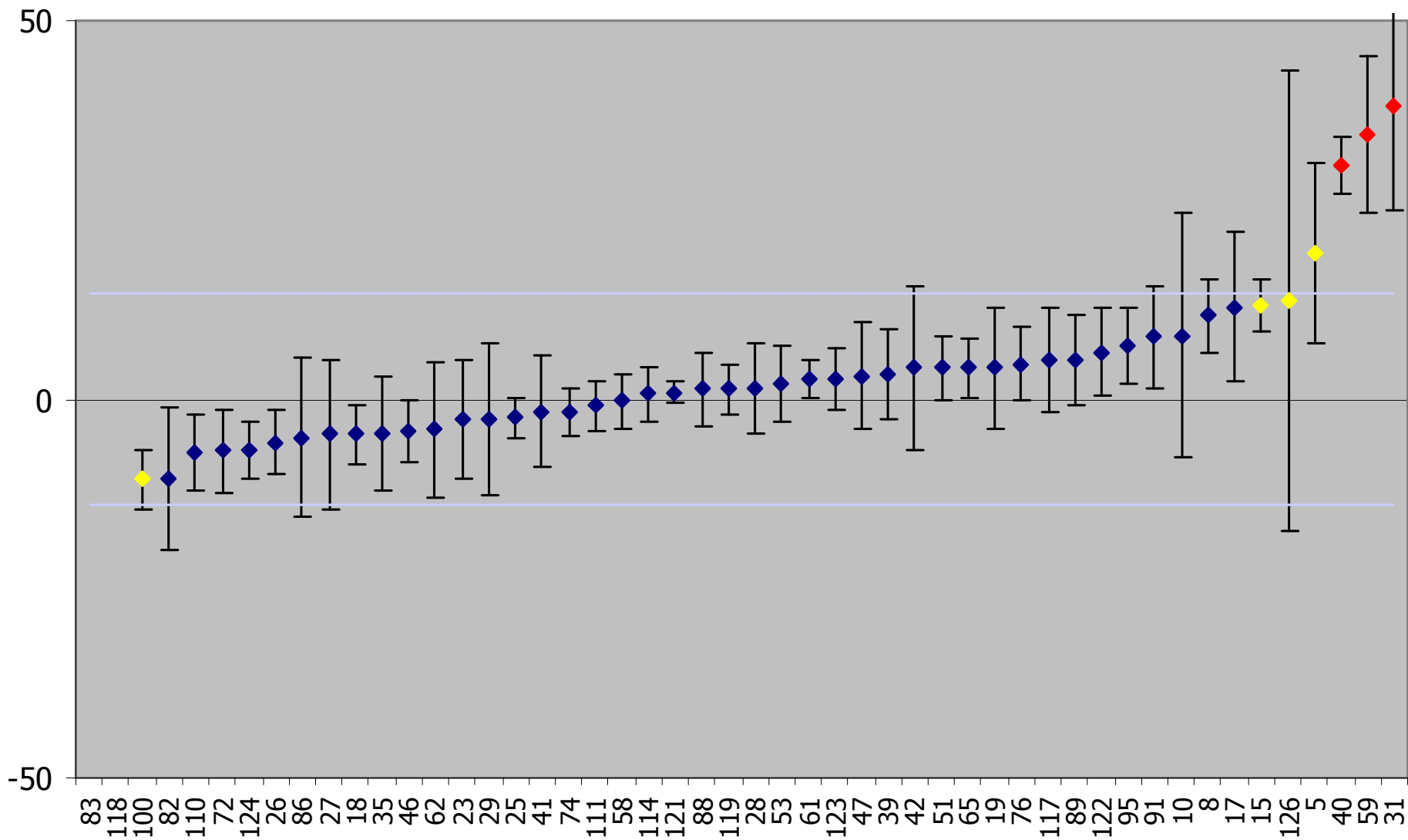
GL (2008)

<b>72%</b>	'in agreement'	68%
<b>12%</b>	'questionable'	15%
<b>5%</b>	'discrepant'	13%
<b>11%</b>	'missing'	4%

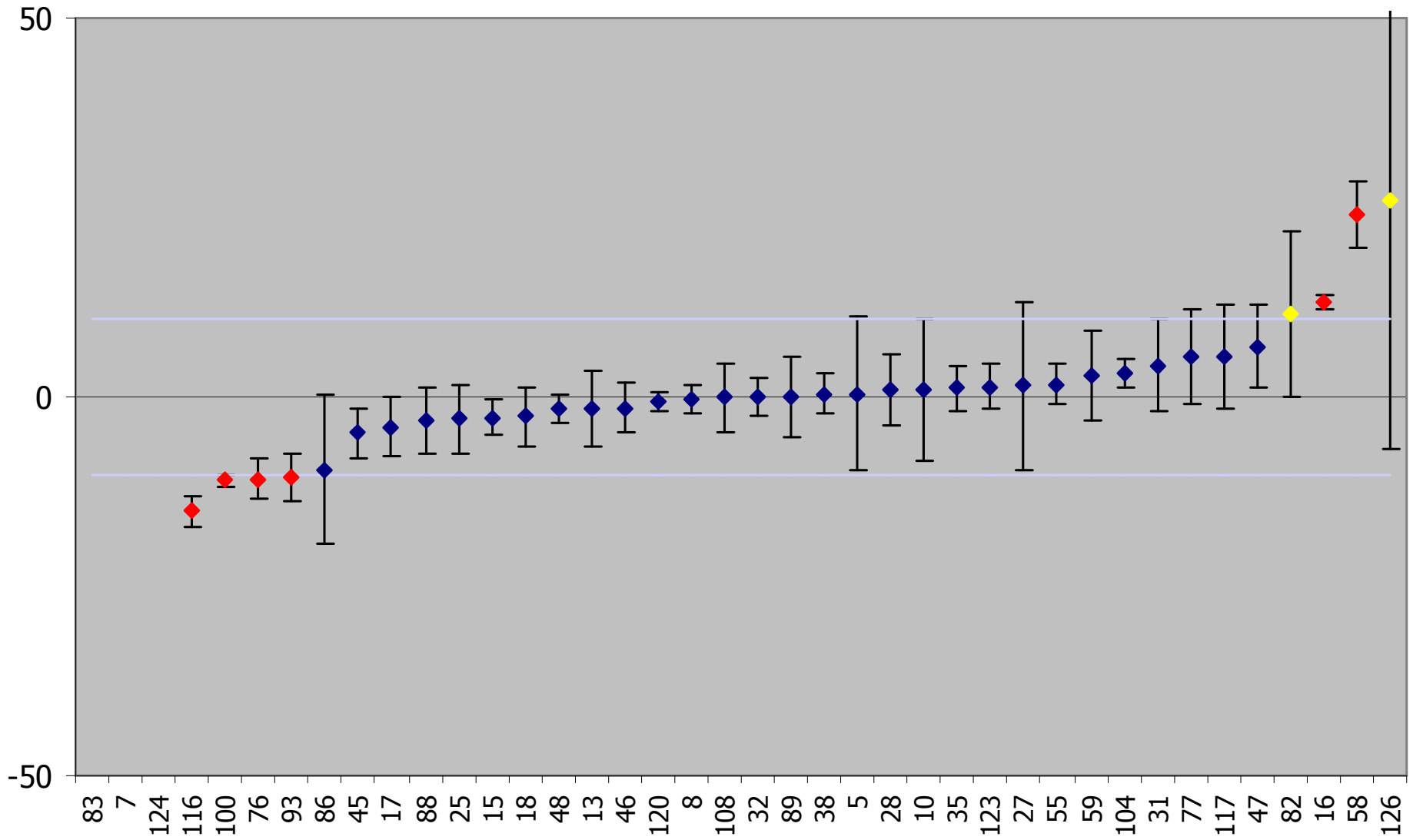
GH

<b>68%</b>	'in agreement'	61%
<b>9%</b>	'questionable'	22%
<b>18%</b>	'discrepant'	14%
<b>4%</b>	'missing'	3%

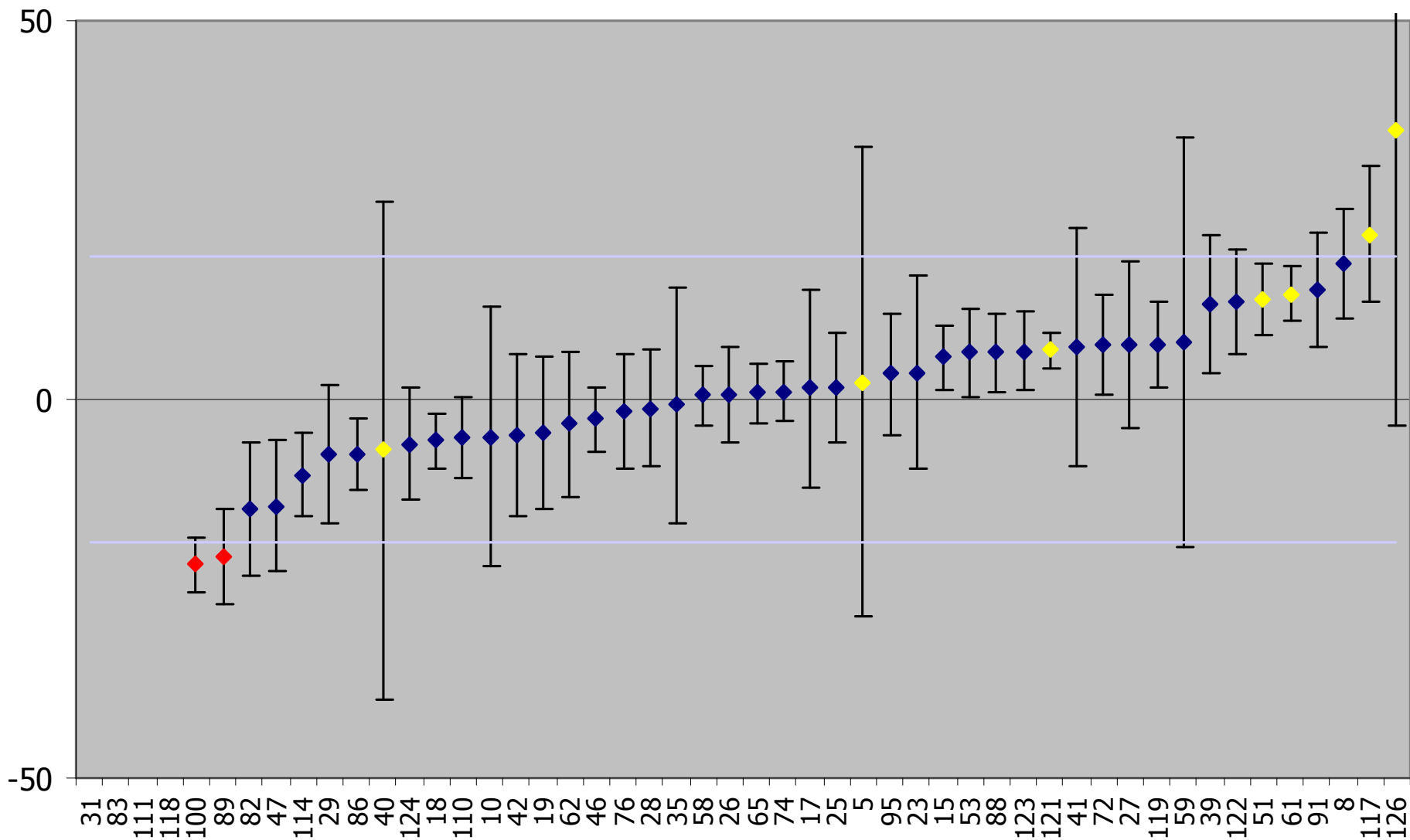
# Deviation (%) Co-60 GL



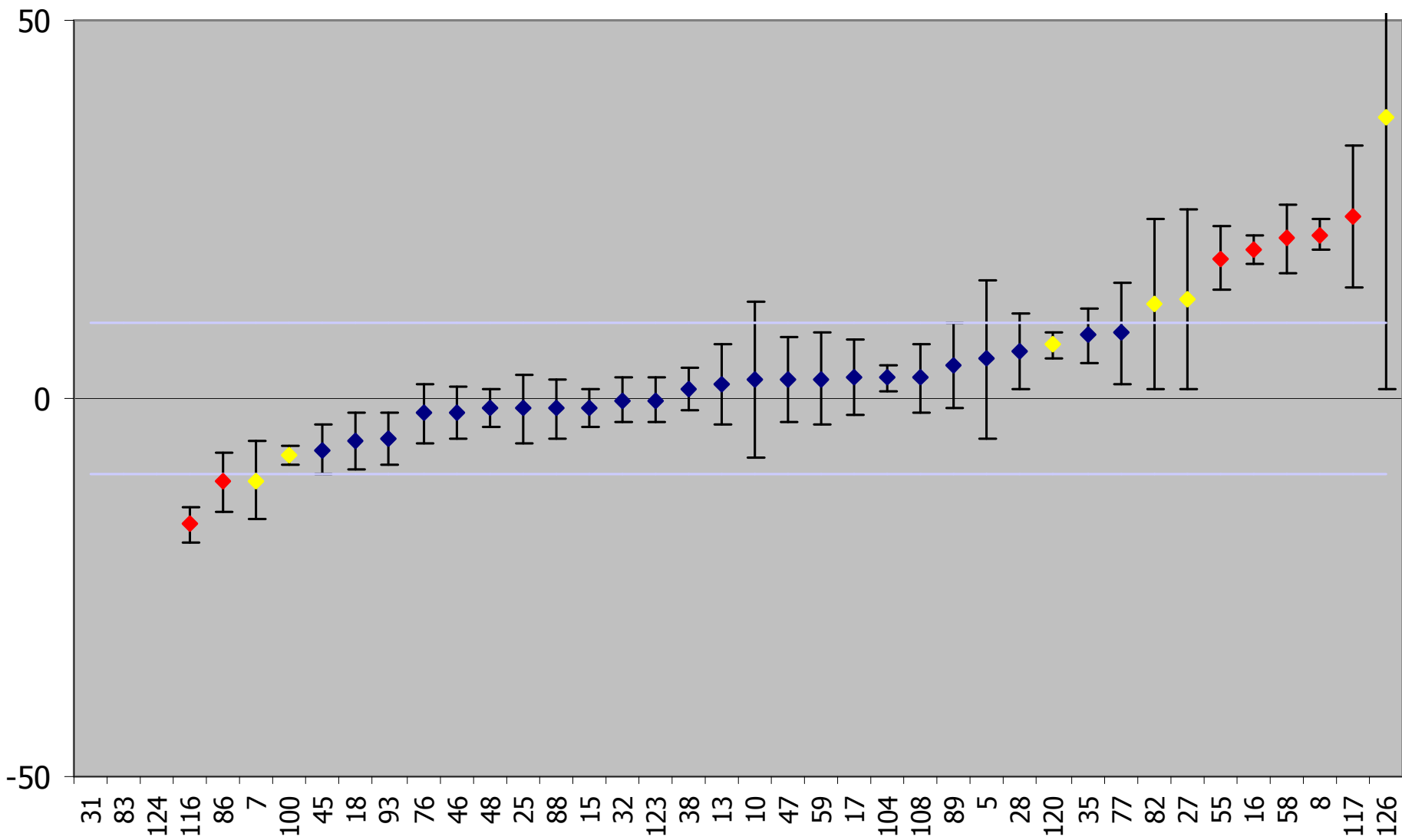
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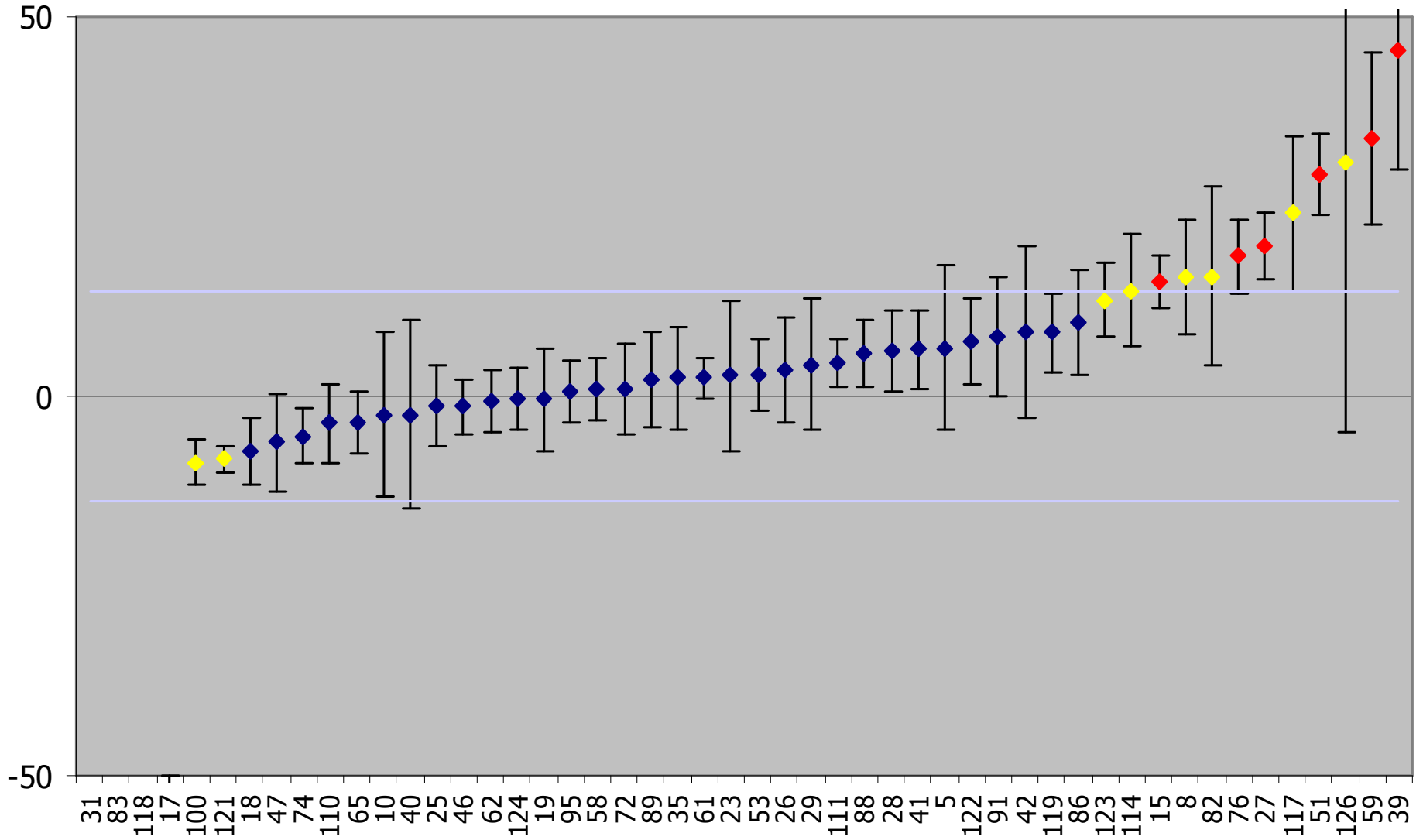
# Deviation (%) Zn-65 GL



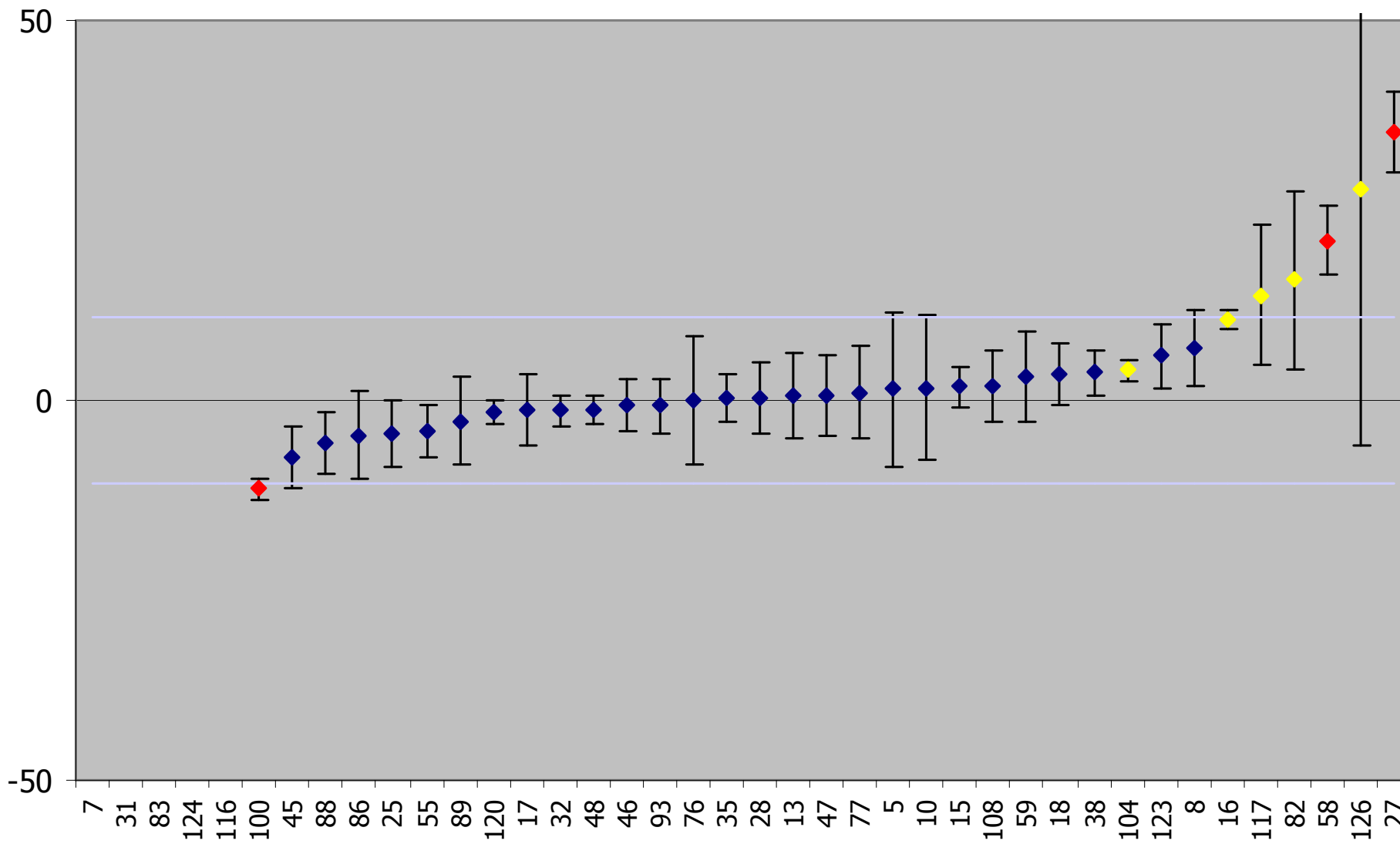
# Deviation (%) Zn-65 GH



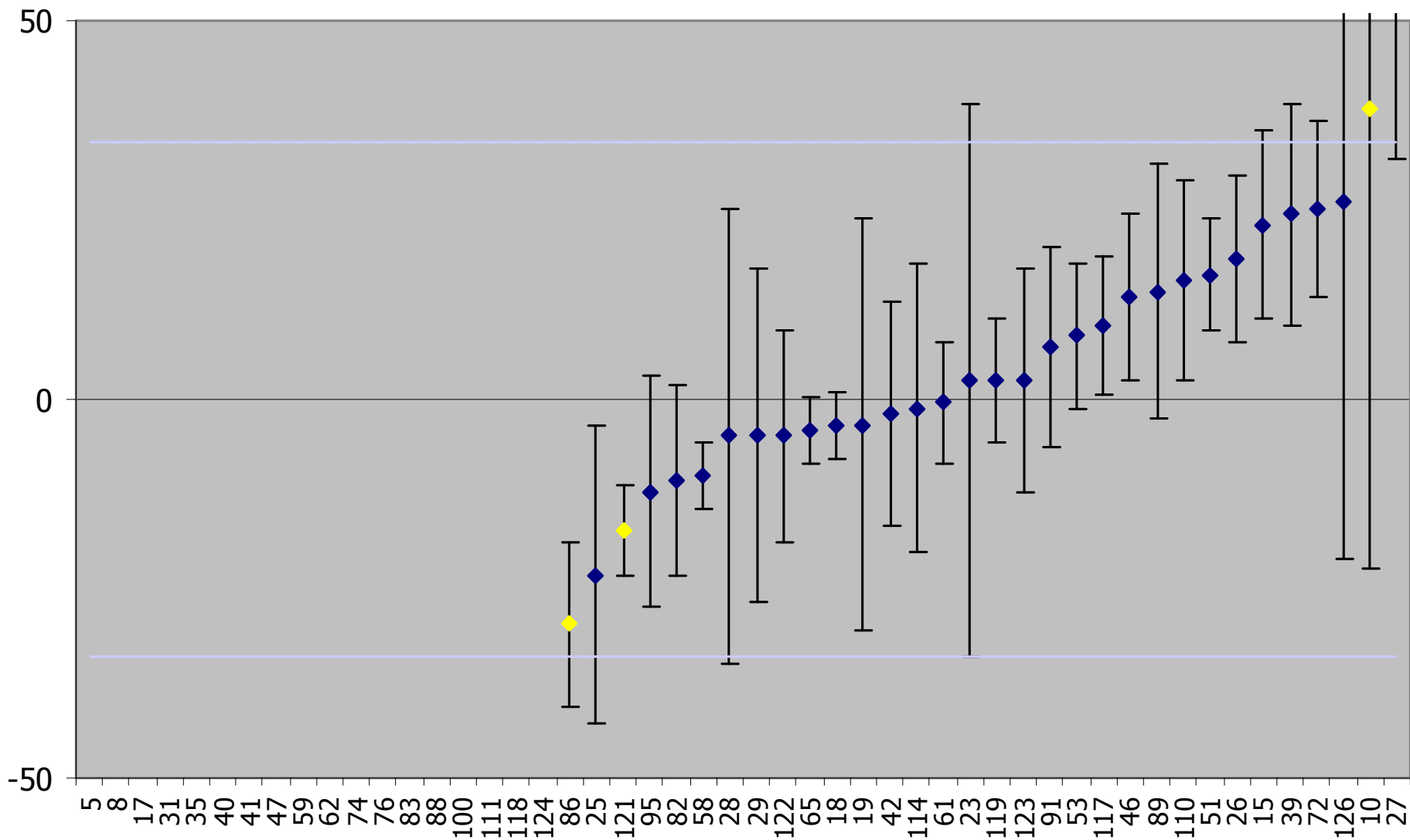
# Deviation (%) Sr-85 GL



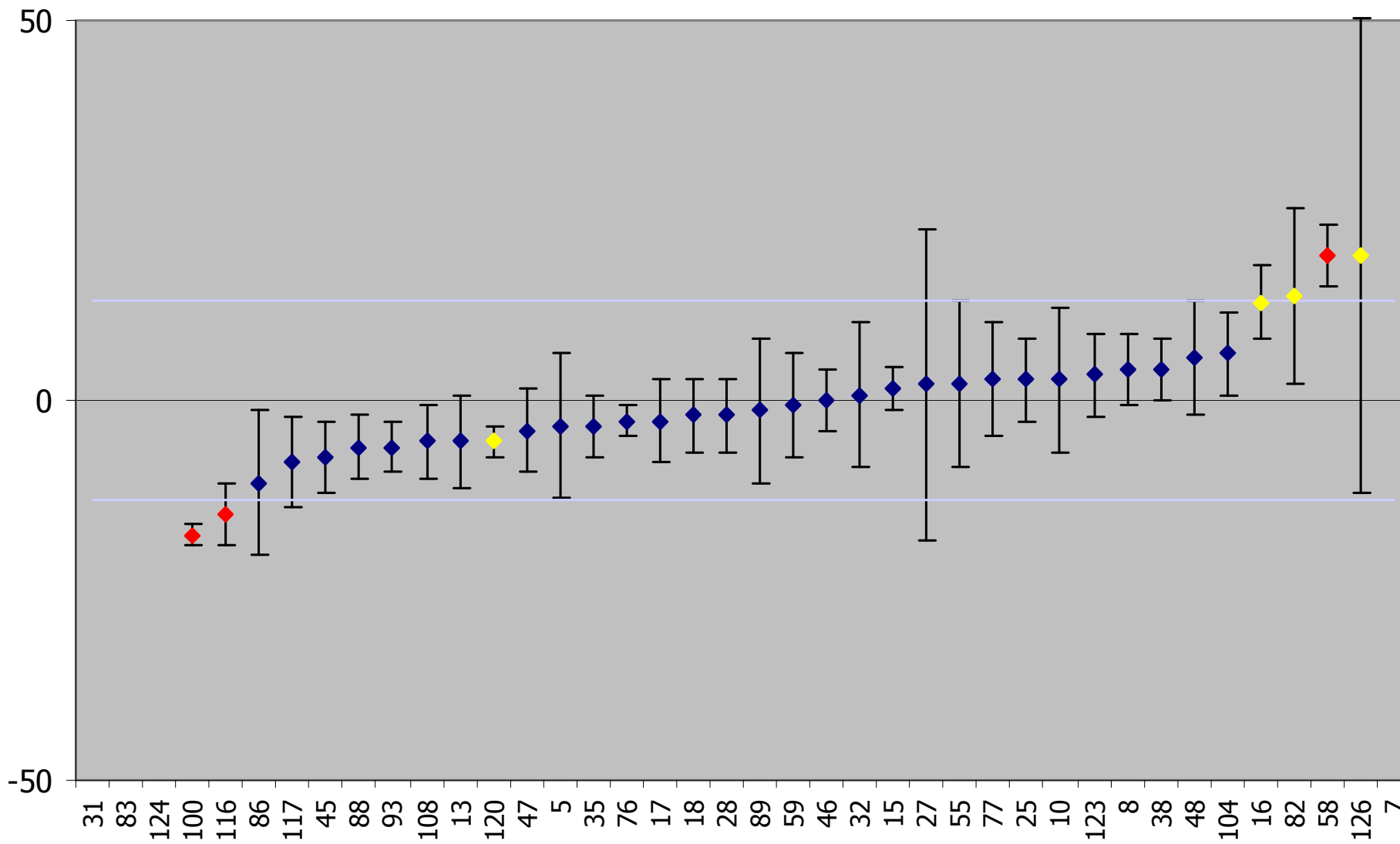
# Deviation (%) Sr-85 GH



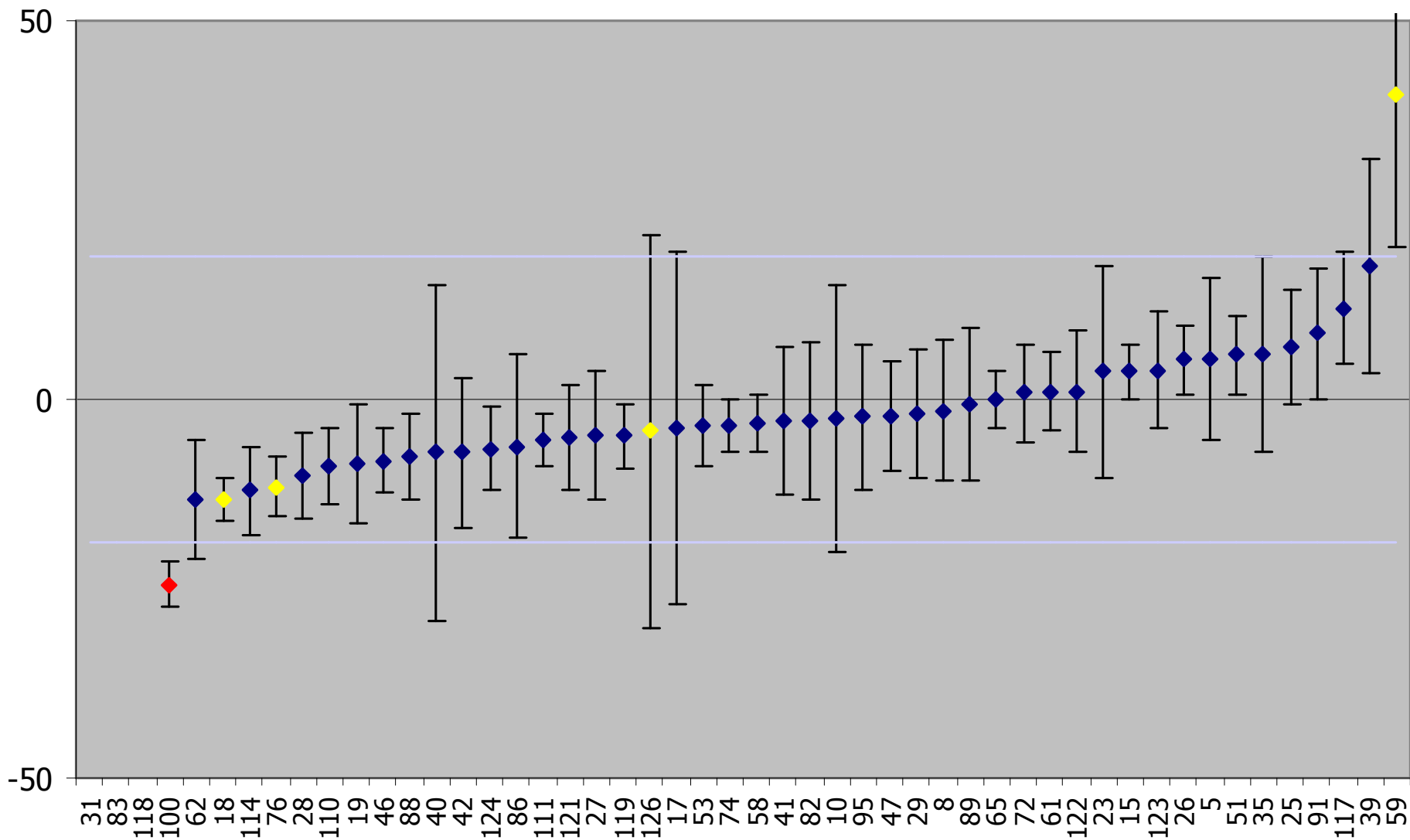
# Deviation (%) Sb-125 GL



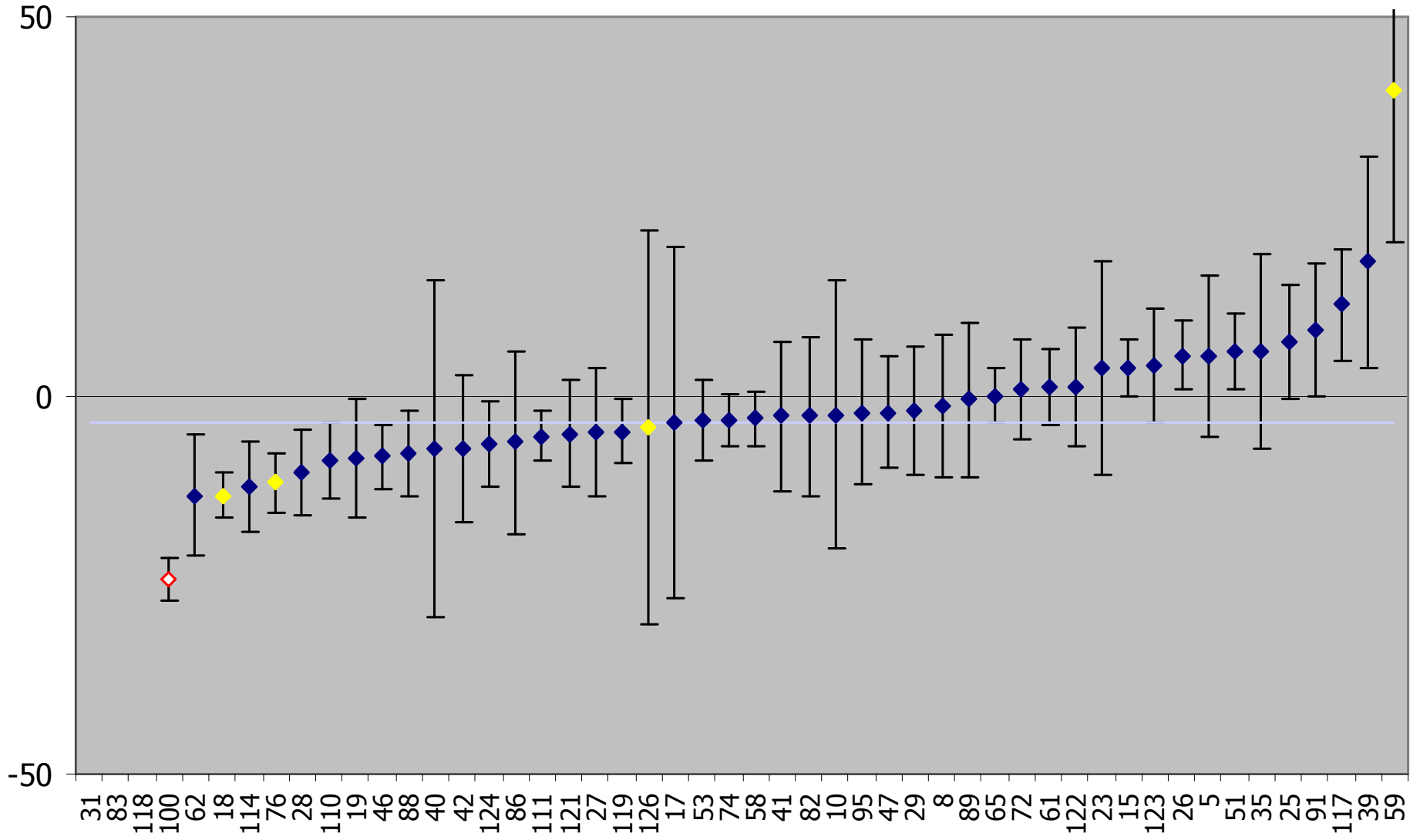
# Deviation (%) Sb-125 GH



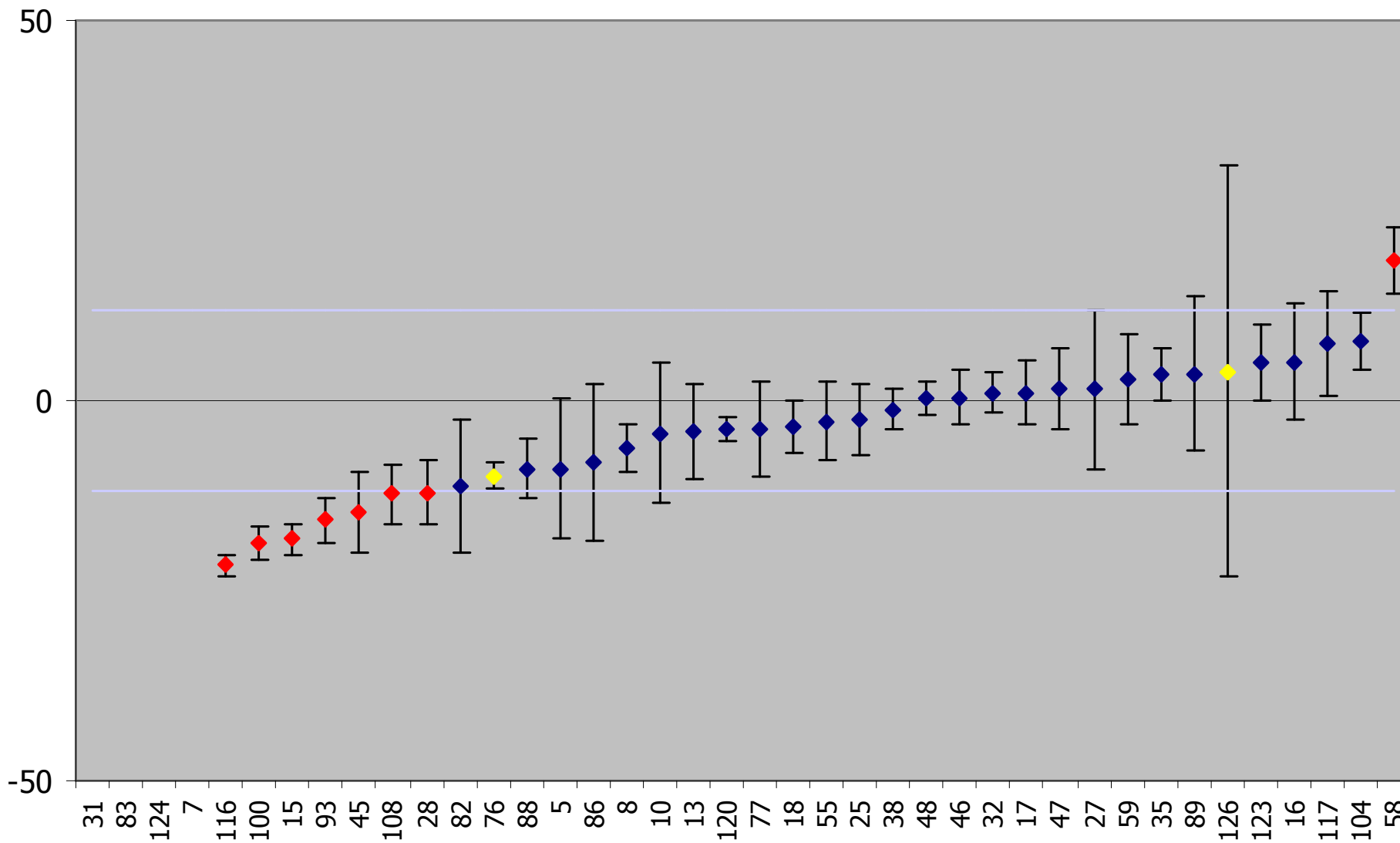
# Deviation (%) Ba-133 GL



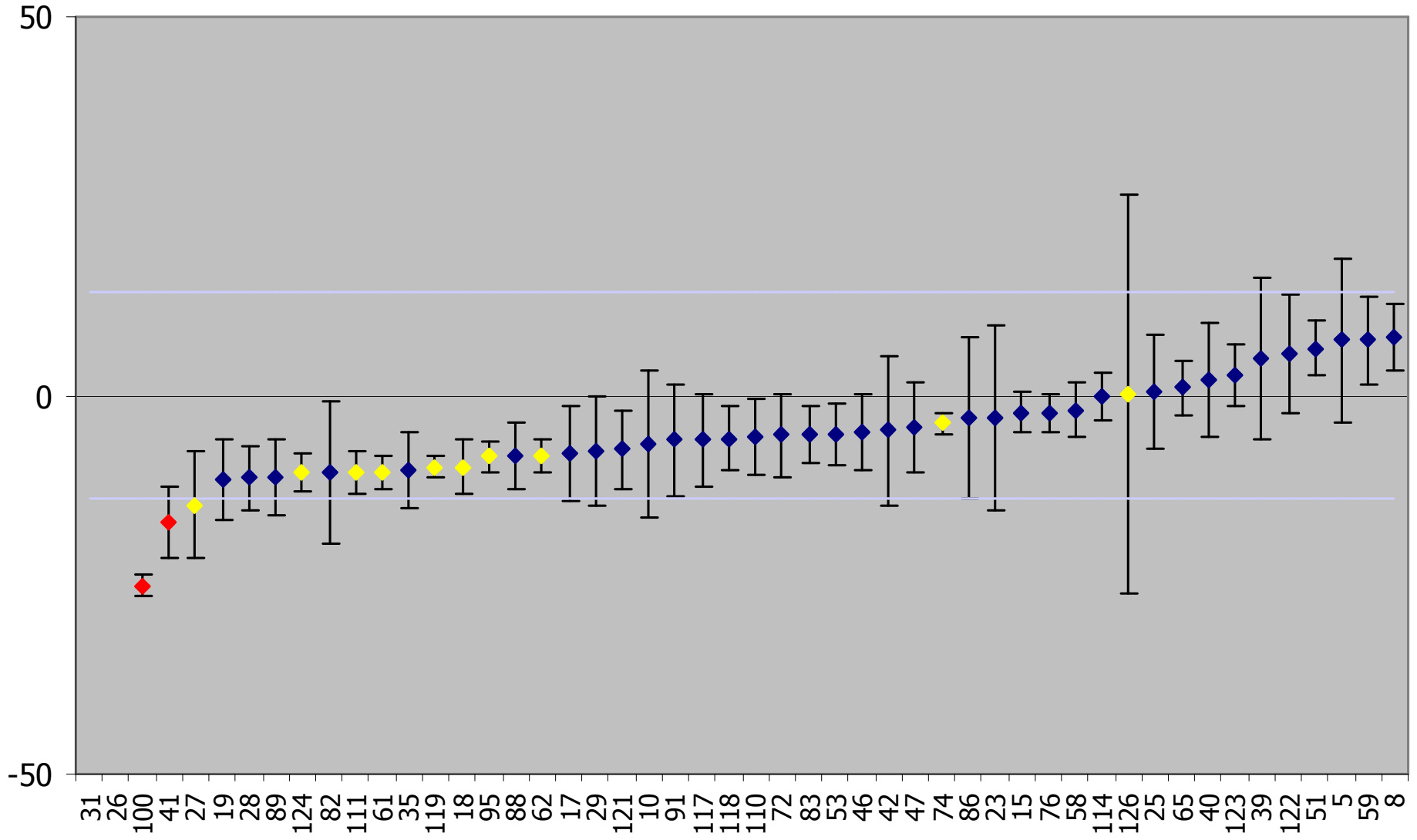
# LCS Ba-133 GL



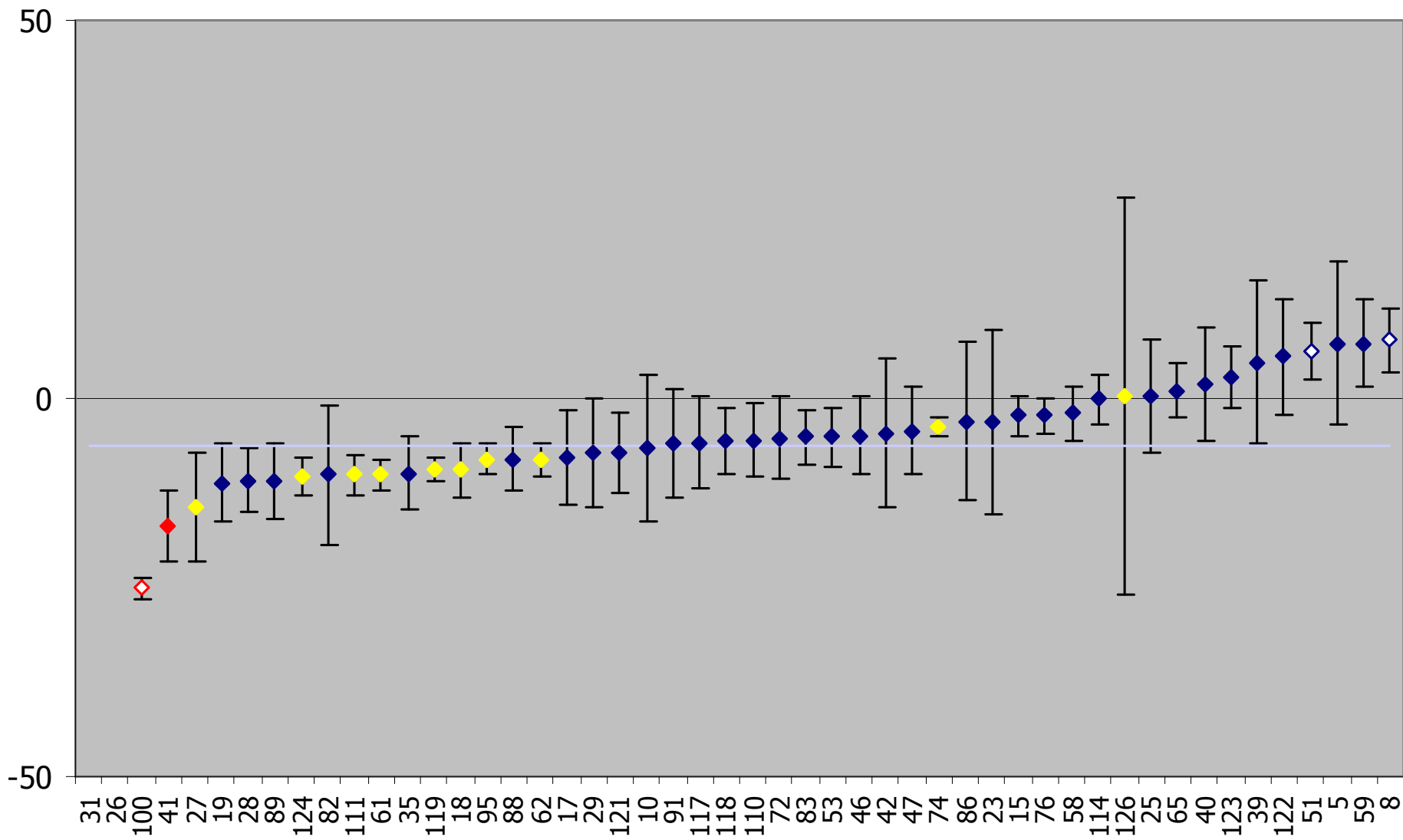
# Deviation (%) Ba-133 GH



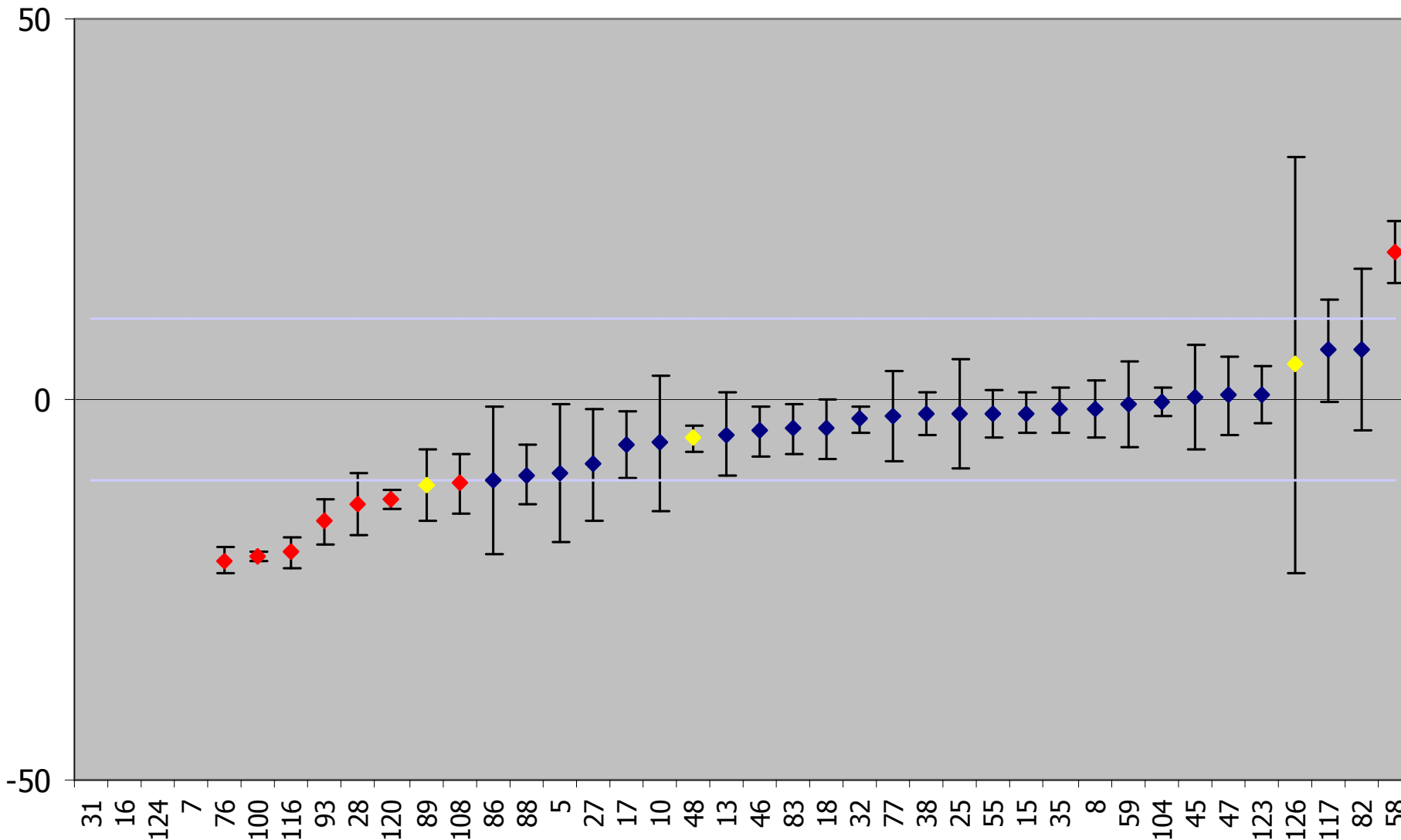
# Deviation (%) Cs-134 GL



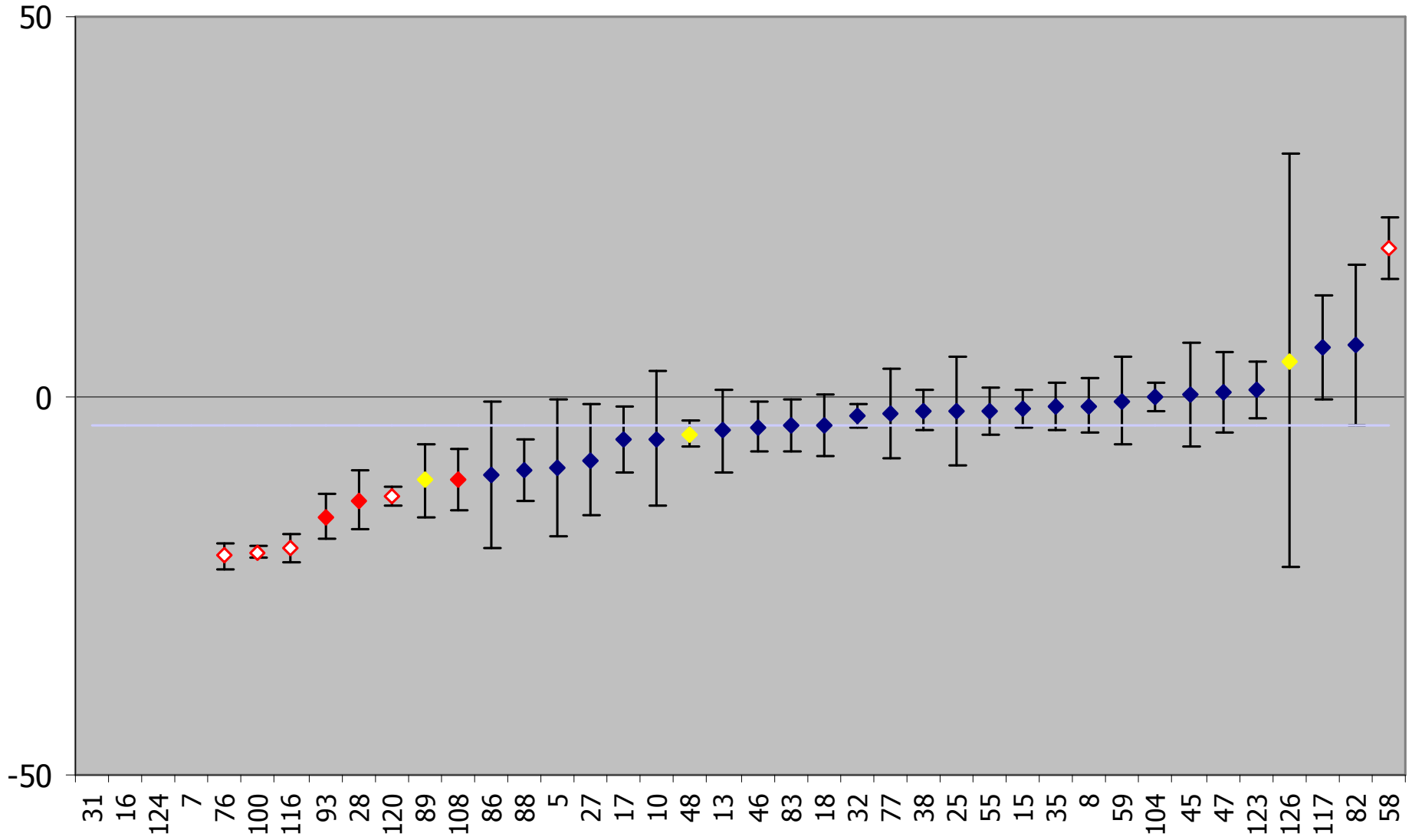
# LCS Cs-134 GL



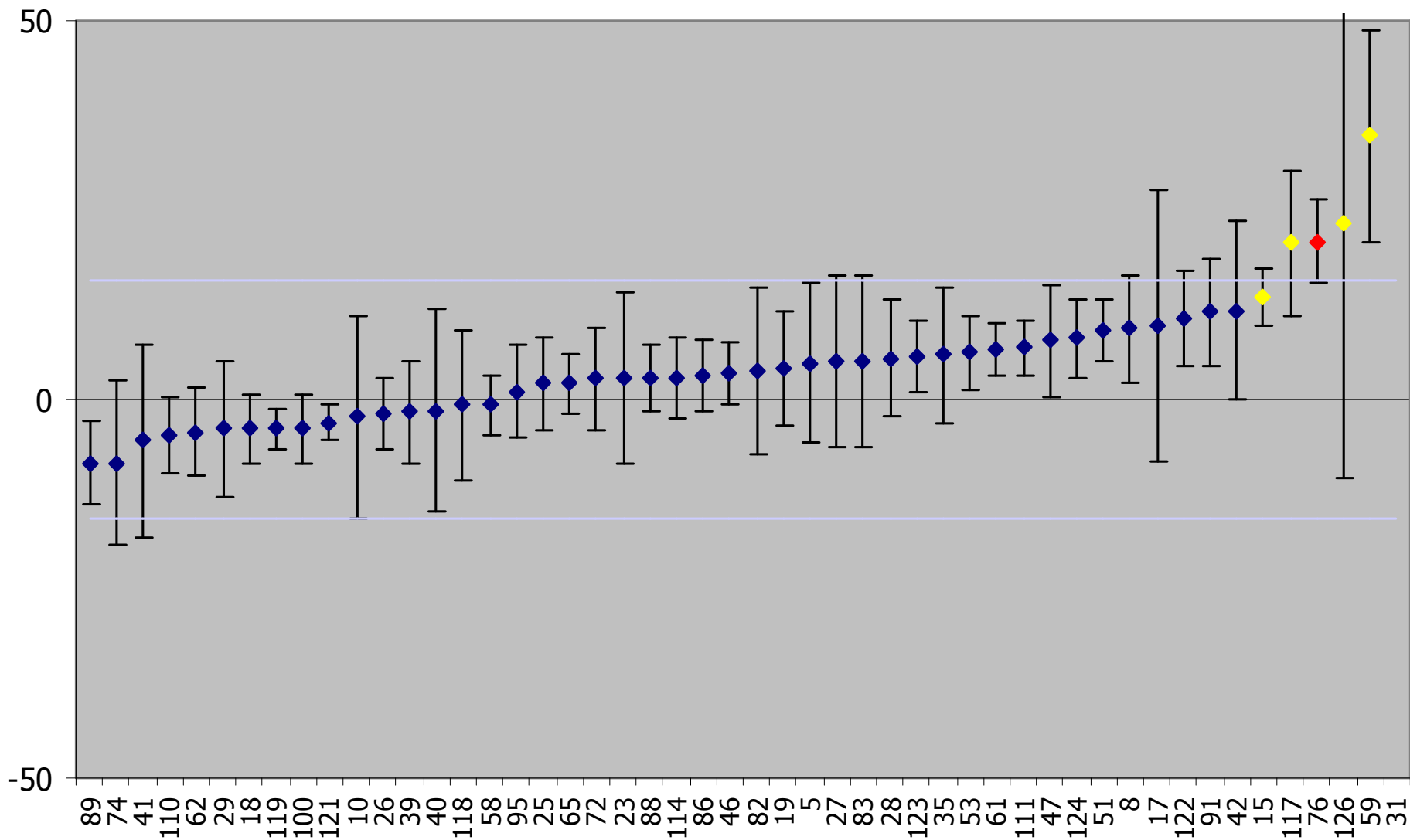
# Deviation (%) Cs-134 GH



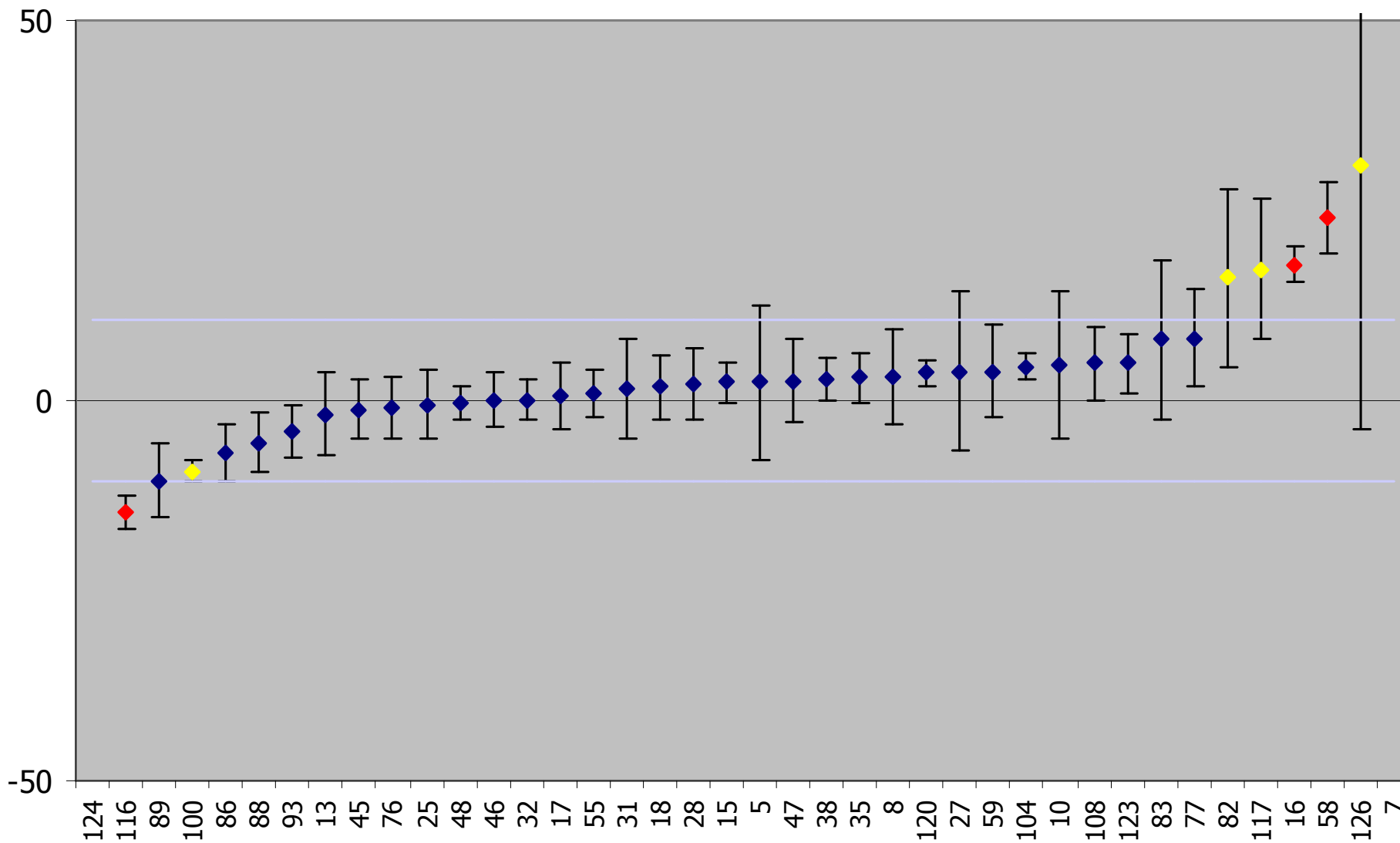
# LCS Cs-134 GH



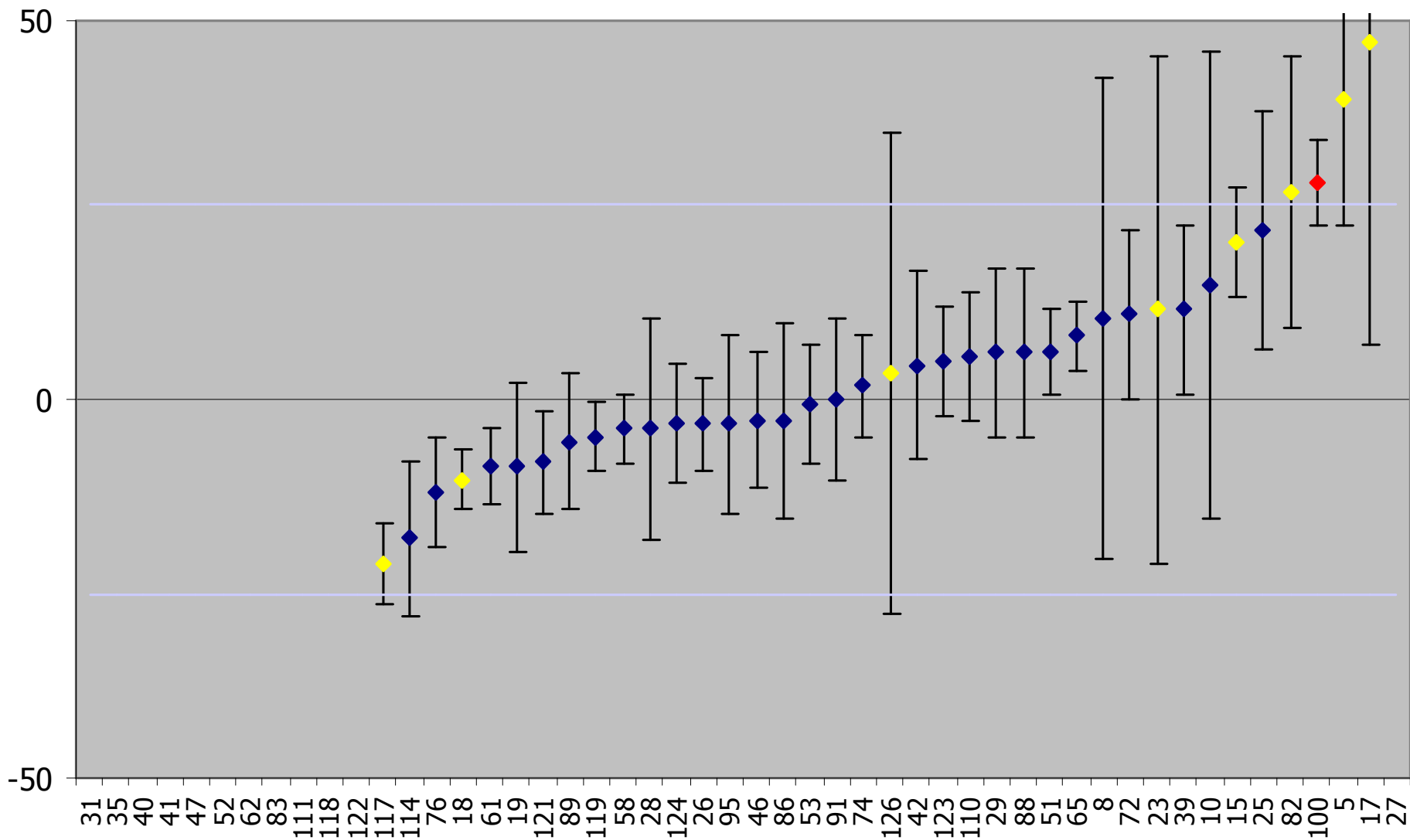
# Deviation (%) Cs-137 GL



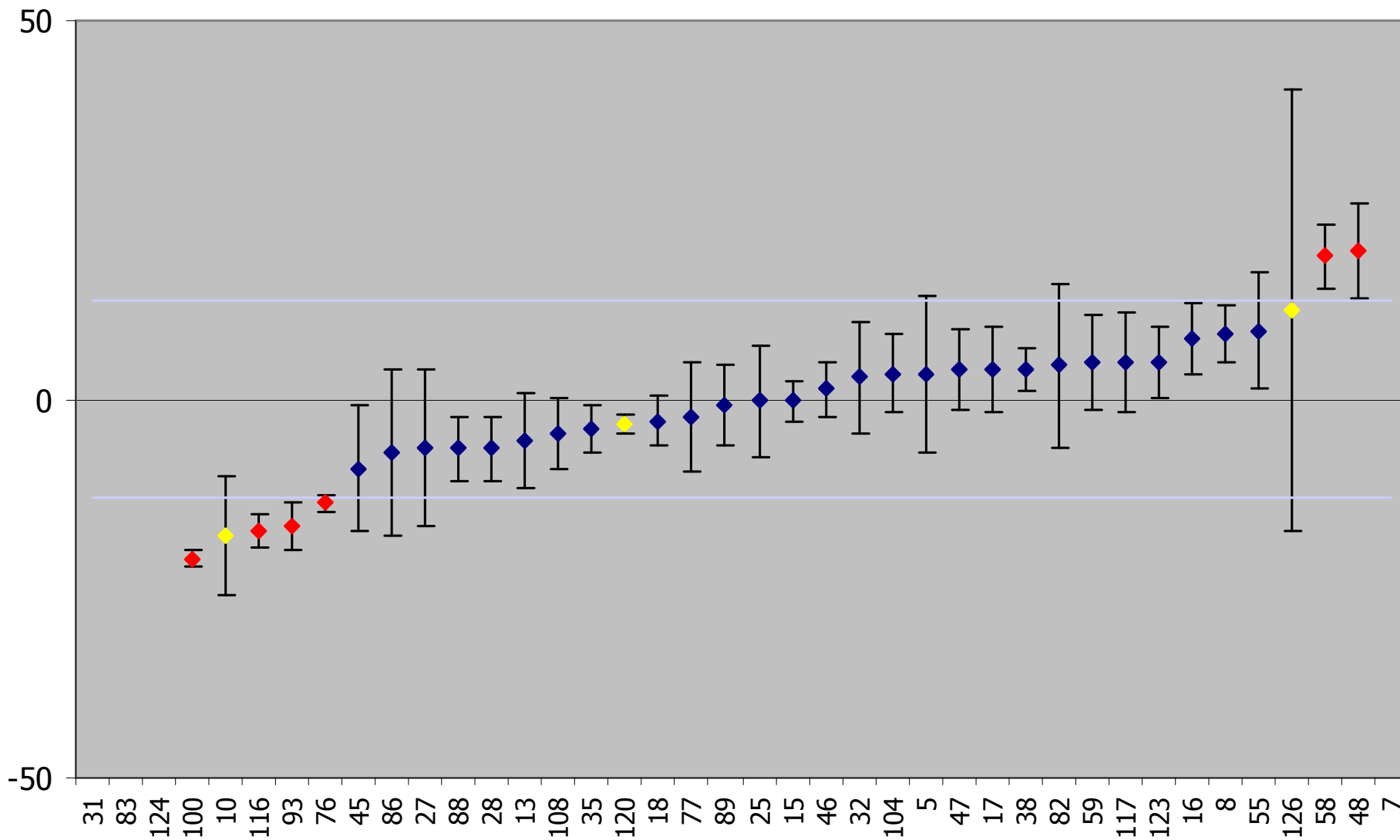
# Deviation (%) Cs-137 GH



# Deviation (%) Eu-152 GL



# Deviation (%) Eu-152 GH



Thank you