H—>invisible using Z—>ll

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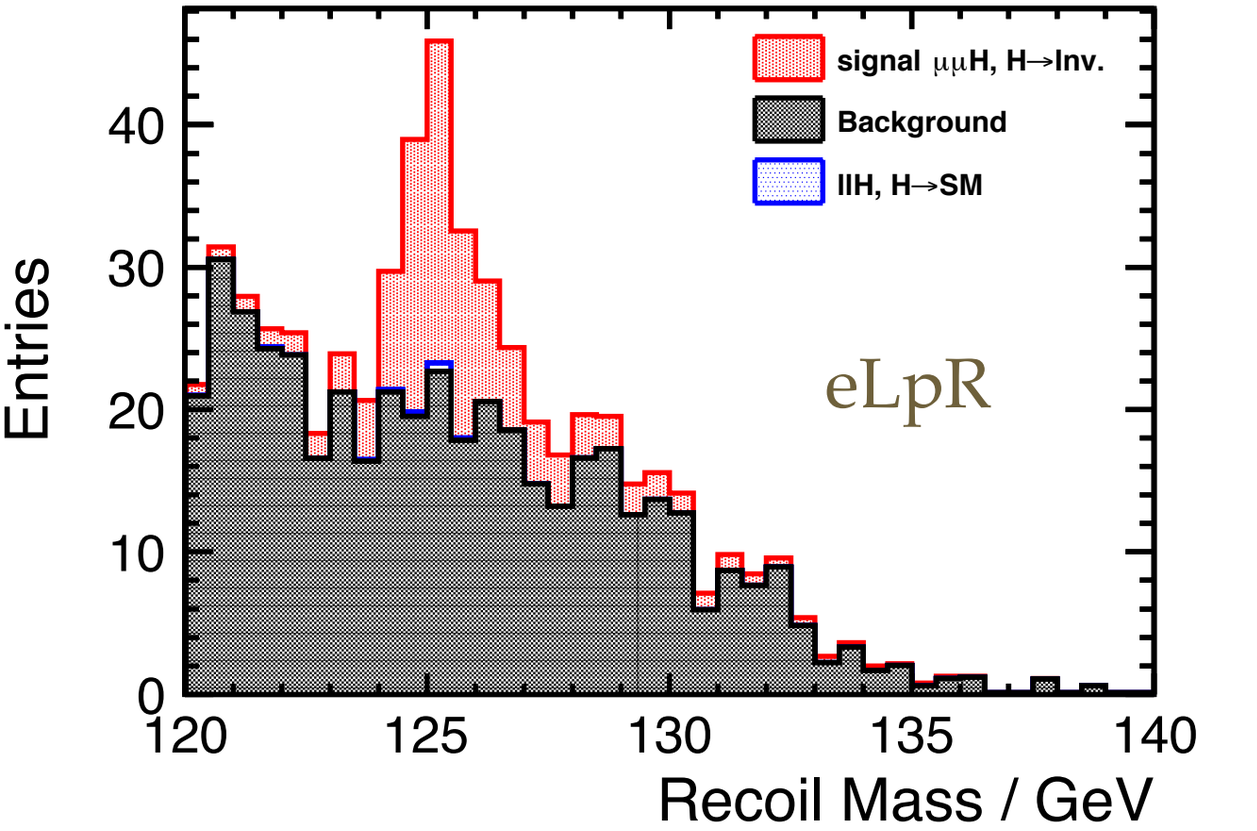
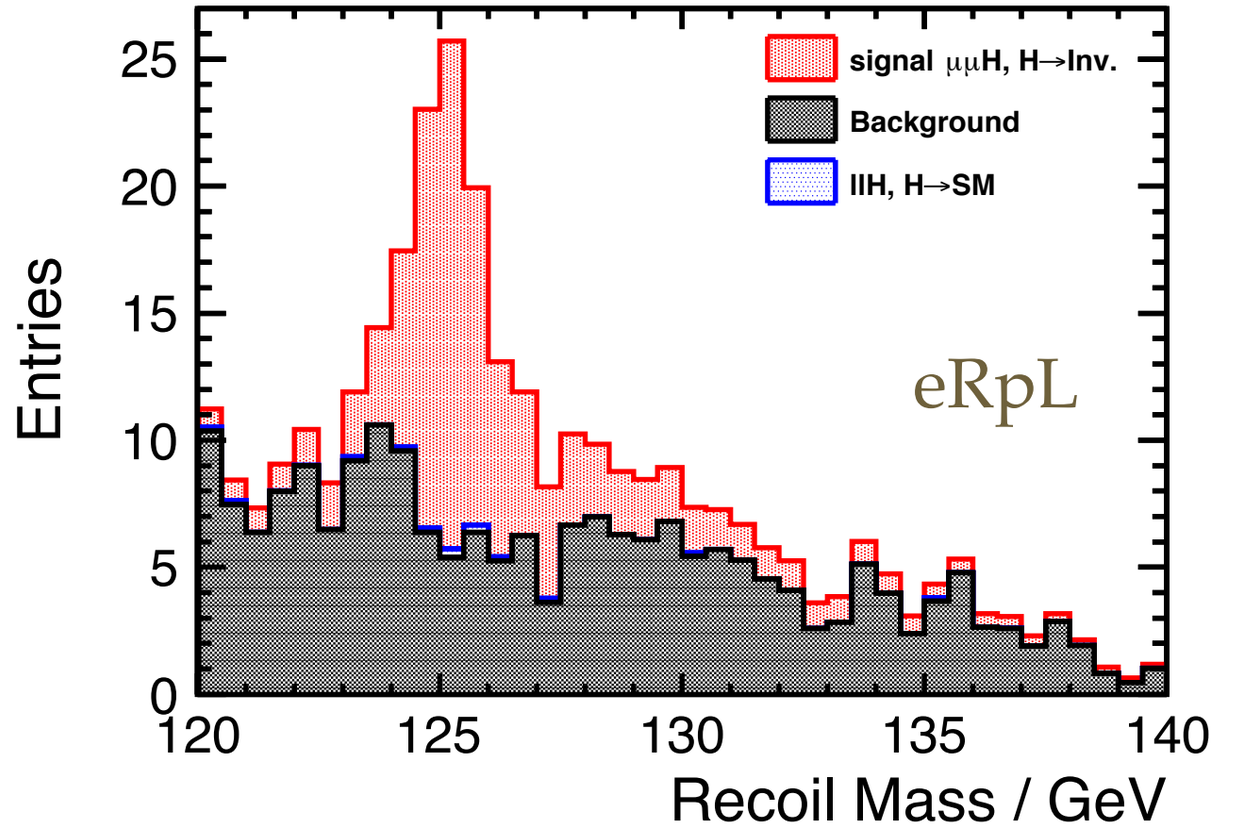
invisible decay using lepton channel @ 250 GeV

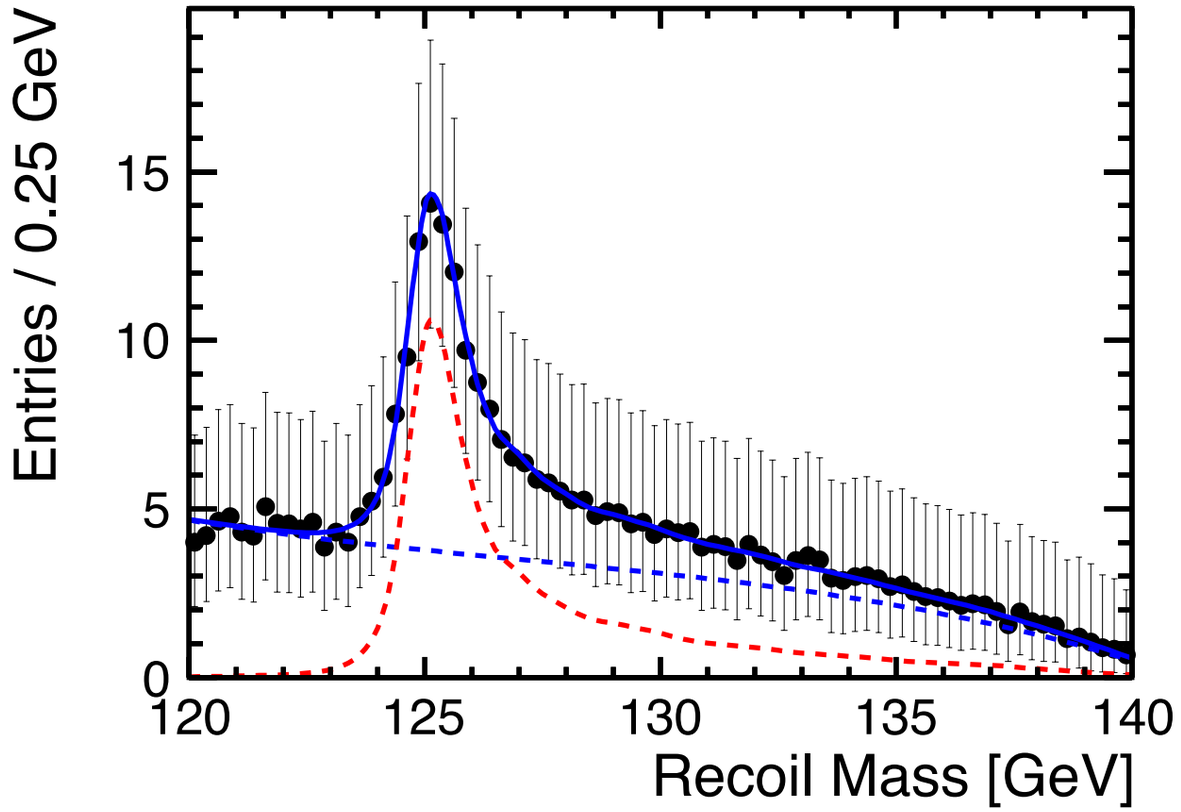
(Br(H—>in.v) = 10%, 250 fb-1 data)

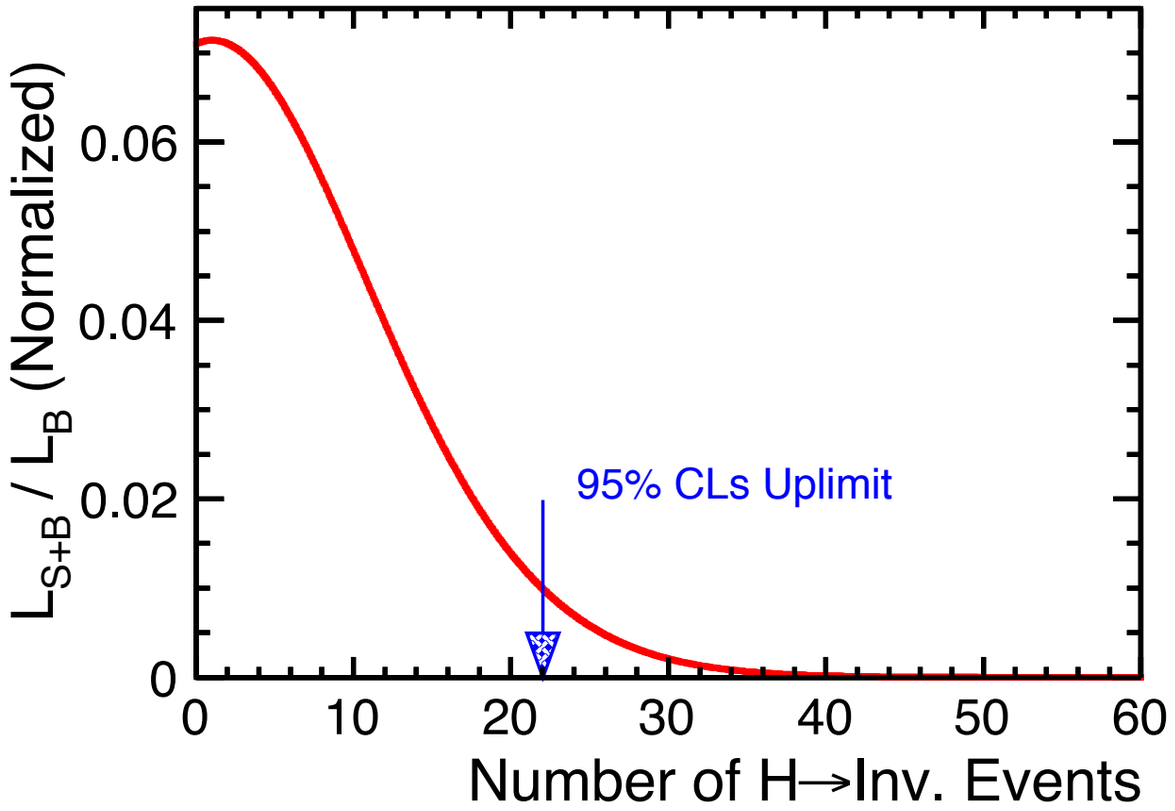




- event selections are almost identical to leptonic recoil mass analysis
- except one more cut on visible 4-momentum other than the di-leptons

upper limit using CLs method (L_{S+B}/L_B)





- (left) fitting S+B data with kernel function + polynomial
- (right) calculate L_{S+B}/L_B for B only (assuming no signal) data as a function of number of signal events, and set the 95% C.L upper limit

upper limit using CLs method (L_{S+B}/L_B)

250 GeV

95% CLs uplimit	(-0.8,+0.3)	(+0.8,-0.3)
μμH	2.46%	1.57%
eeH	3.56%	2.22%
combined	2.02%	1.28%

350 GeV

95% CLs uplimit	(-0.8,+0.3)	(+0.8,-0.3)
μμH	2.36%	2.09%
eeH	4.17%	3.42%
combined	2.05%	1.78%

500 GeV

95% CLs uplimit	(-0.8,+0.3)	(+0.8,-0.3)
μμH	4.31%	3.28%
eeH	6.78%	4.46%
combined	3.64%	2.64%

UL on BF [%] (time needed to achieve upper limit of 0.69% [year])	“Left”	“Right”
250GeV	0.95 (5.7)	0.69 (3.0)
350GeV	1.49 (14)	1.37 (12)
500GeV	3.16 (63)	2.30 (33)

qqH by Ishikawa-san