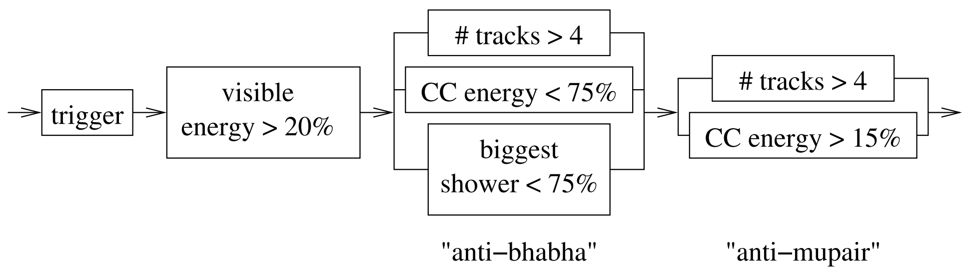
A quick quick explaination:
Υ decays were split into five classes, and mode-by-mode efficiencies are plotted on each of five pages. A sixth page shows $\tau^+\tau^-$ events split up by how they decay. On the last page are aggregate efficiencies of all events, with all the proper correlations taken into account.
Talk to you Wednesday!

A (not-actually) quick explaination:

This document illustrates the efficiency of these cuts:



as a function of decay mode. Since there are N$^{???}$ different possible decay trees for inclusive $\Upsilon \to$ anything, the decay trees are divided into one of these classes:

$b\bar{b}$ decays to...	$X\,ggg$ or $X\,gg$	$X\,gg\gamma$	$X\,e^+e^-$	$X\,\mu^+\mu^-$	$X\,\tau^+\tau^-$
PHOTOS was used in the $b\bar{b}$ decay					
PHOTOS wasn't used					

Each of these classes will be presented on a separate page. For the $\Upsilon(1S)$, there is only one way to decay to the specified mode (two in the case of PHOTOS, as there may be one or two photons), but for the $\Upsilon(2S)$ and $\Upsilon(3S)$, there are many cascade chains to get to the specified final state; the efficiency of each of these subclasses will be determined, plotted, and used for later calculations.

These subclasses are singletons for e^+e^- and $\mu^+\mu^-$ but very large sets for ggg, $gg\gamma$, and $\tau^+\tau^-$. Breaking up ggg and $gg\gamma$ would be difficult, since they can decay to nearly anything. Fortunately, it's unnecessary: ggg are highly efficient and the efficiency of $gg\gamma$ depends mostly on the spectrum of the high-energy photon. But $\tau^+\tau^-$ have widely-varying efficiencies which depend strongly on the decay topology, so I split these up into 111 sub-subclasses: the top ten τ decays + 1 "everything else", all squared to let the two sides of the event decay independently.

At the bottom of each page, I calculate the aggregate efficiency for each class, combining subclasses (and sub-subclasses) according to their PDG branching fractions, which I vary according to their PDG uncertainties. This calculation is done with a toy Monte Carlo which takes all correlations into account: leptonic branching fractions are equal, and τ^- decays are equal to their conjugate τ^+ decays. All other inputs were determined using independent data and are therefore varied independently.

PHOTOS-ified modes couldn't be varied this way, since PDG branching fractions integrate over soft photons. So PHOTOS's mode-by-mode branching fractions were taken directly from the MC— *not* fluctuated. The efficiencies listed on the bottoms of each page have non-PHOTOfied and PHOTOfied modes combined, and just to tune this effect, I fluctuated the overall normalization of PHOTOfied to non-PHOTOfied modes by 30%. (We can change that later.) Non-PHOTOfied modes are usually far more numerous than PHOTOfied ones, so it's reasonable to give the non-PHOTOfied ones more attention. (Only for final-state leptons are the PHOTOfied modes actually significant— for these, I had to adjust my PDG leptonic branching fraction to avoid double-counting. This is a detail.)

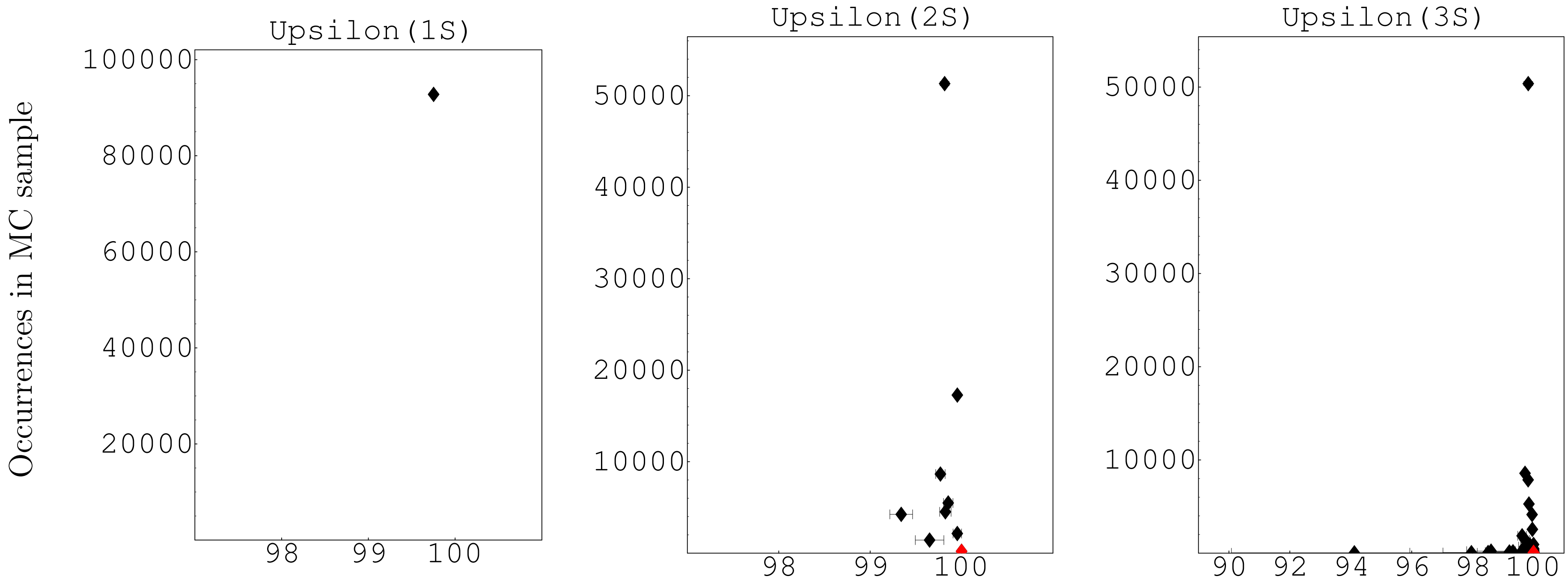
The last variable I fluctuated was the ratio of events that decay to ggg versus those that decay to $gg\gamma$. This is a QED calculation, but just because it doesn't hurt, I varied it up and down 33%. (The nominal value is 0.03 $gg\gamma$ to ggg.) This relates two distinct classes (two pages), so it only comes into the calculation of "branching fraction to this set of modes" on the bottom-right of the page. It's the blue error. (The black error that preceeds it comes from PDG uncertainties.)

On the last page, I put everything together to calculate the total efficiency and hadronic efficiency of these cuts. To get all the correlations right, I did it in one big toy MC, combining all classes. I still vary PDG uncertainties, PHOTOSification probability, and $\mathcal{B}(\frac{gg\gamma}{ggg})$, and often the overall uncertainties are less than what they would seem from the individual pages, since there are many large correlations. I repeated each calculation using Istvan's 6/15/04 $\mathcal{B}_{\mu\mu}$.

(Incidentally, this hadronic efficiency is really the hadronic efficiency, defined as the rest of the world defines it: so $\Upsilon(3S) \to \pi^0\pi^0\Upsilon(1S)$, $\Upsilon(1S) \to e^+e^-$ is counted as hadronic, and $\Upsilon(1S) \to \tau^+\tau^- \to$ 10 tracks is counted as leptonic. We get the expected behavior that hadronic efficiencies are better known than total efficiencies.)

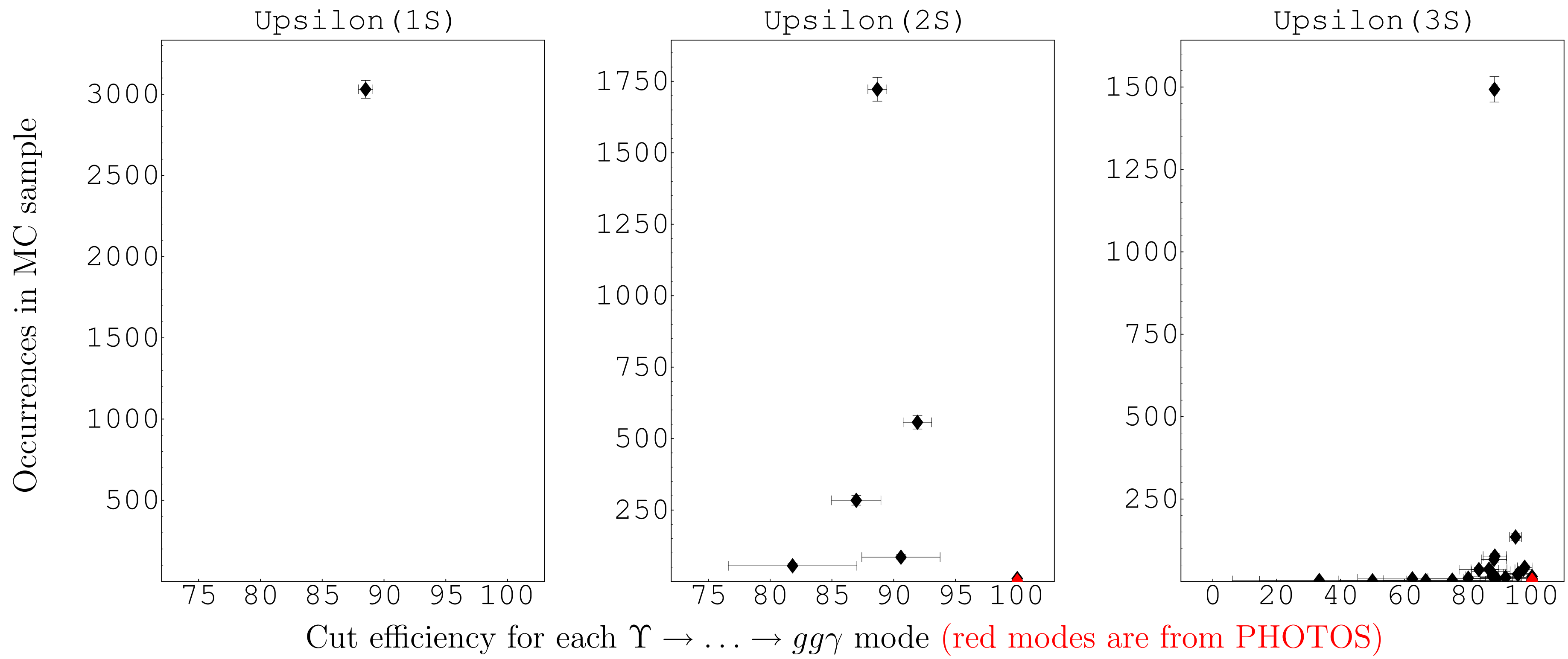
(Also on the last page, I didn't break $\tau^+\tau^-$ up into sub-subclasses because this didn't make much difference: the top ten decay modes of the τ are all known to better than 1% of the total τ width, so even though their efficiencies depend very much on mode, the modes are properly modelled in the Monte Carlo.)

This work is the result of a lot of internal cross-checks (that's why it's so late), and I claim that I can explain any relationship in the results. We'll see!

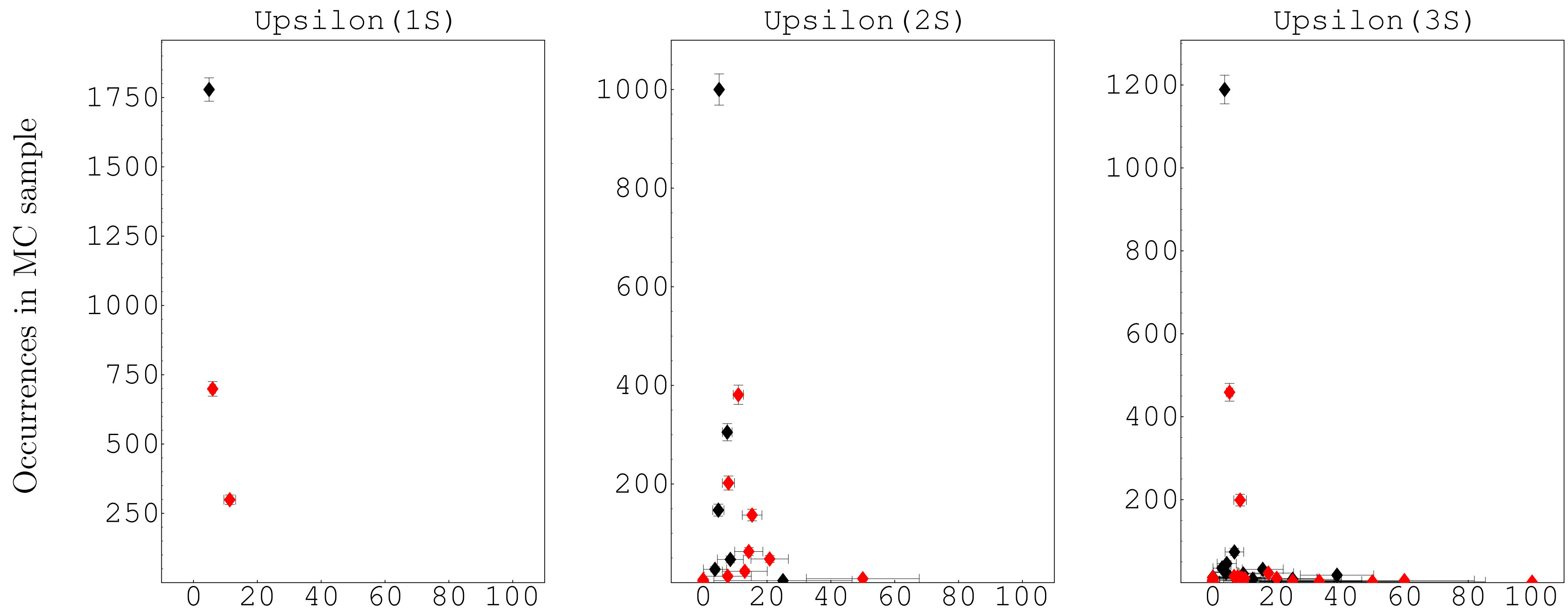


Cut efficiency for each $\Upsilon \to \ldots \to$ gluons mode (red modes are from PHOTOS)

Resonance	Cut efficiency	Statisical Error	Variation with PDG mode uncertainties	Variation with fluctuating PHOTOS 30%	Branching fraction to this set of modes
$\Upsilon(1S)$	99.752%	$\pm$ 0.016	$\pm$ 0	$\pm$ 0	89.783% $\pm$ 0.084 $\pm$ 0.93
$\Upsilon(2S)$	99.821%	$\pm$ 0.014	$\pm$ 0.0034	$\pm$ 0.0001	91.48% $\pm$ 0.26 $\pm$ 0.81
$\Upsilon(3S)$	99.823%	$\pm$ 0.014	$\pm$ 0.0017	$\pm$ 0.0001	90.91% $\pm$ 0.30 $\pm$ 0.70

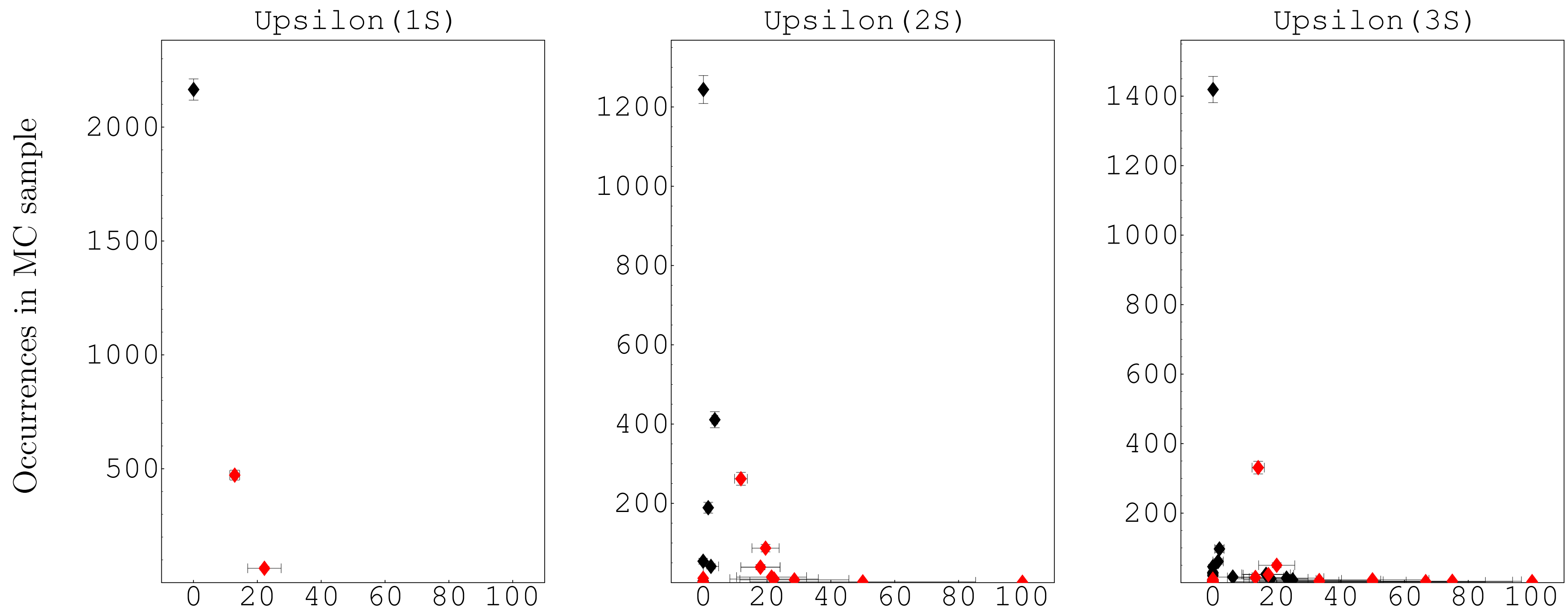


Resonance	Cut efficiency	Statisical Error	Variation with PDG mode uncertainties	Variation with fluctuating PHOTOS 30%	Branching fraction to this set of modes
$\Upsilon(1S)$	88.51%	$\pm$ 0.58	$\pm$ 0	$\pm$ 0	2.7769% $\pm$ 0.0026 $\pm$ 0.93
$\Upsilon(2S)$	89.16%	$\pm$ 0.60	$\pm$ 0.042	$\pm$ 0.0024	2.410% $\pm$ 0.032 $\pm$ 0.80
$\Upsilon(3S)$	89.18%	$\pm$ 0.68	$\pm$ 0.091	$\pm$ 0.014	2.091% $\pm$ 0.035 $\pm$ 0.70



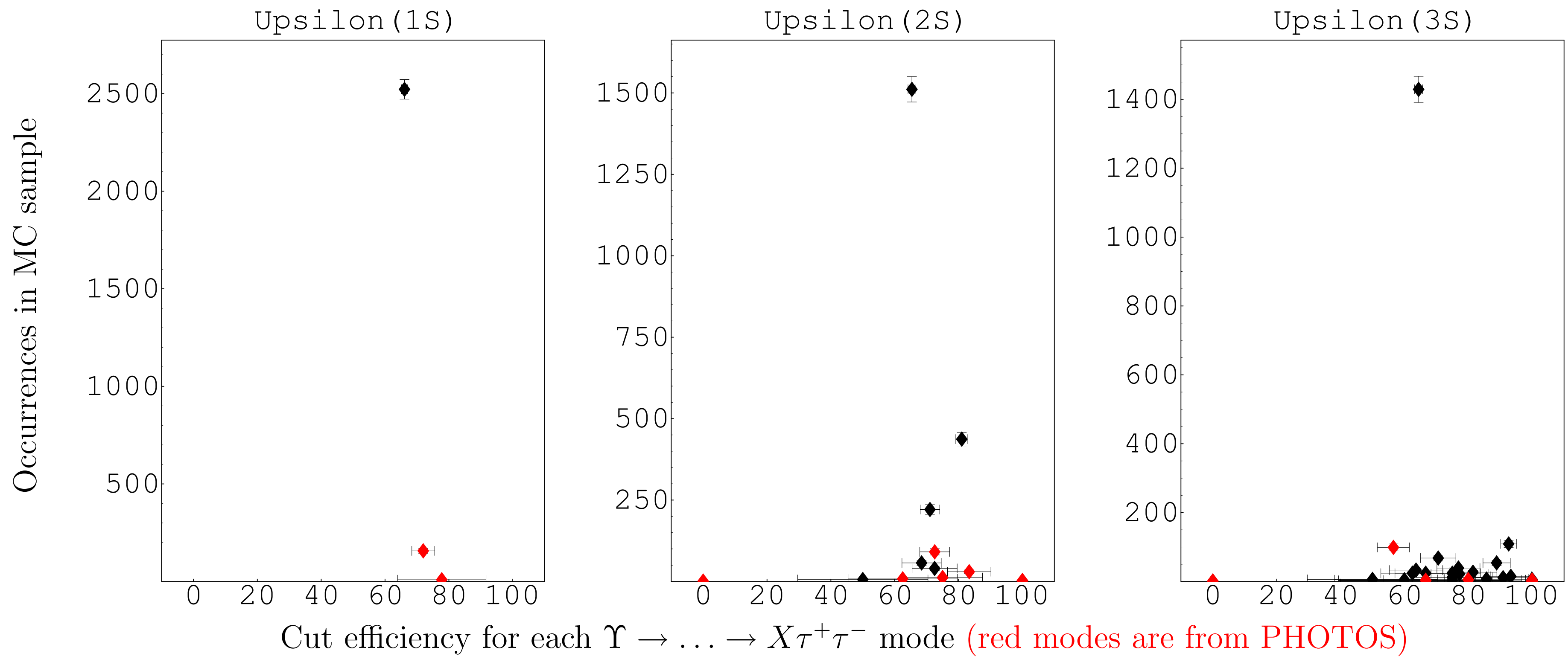
Cut efficiency for each $\Upsilon \to \ldots \to Xe^+e^-$ mode (red modes are from PHOTOS)

Resonance	Cut efficiency	Statisical Error	Variation with PDG mode uncertainties	Variation with fluctuating PHOTOS 30%	Branching fraction to this set of modes
$\Upsilon(1S)$	5.87%	$\pm$ 0.63	$\pm$ 0	$\pm$ 0.29	2.479% $\pm$ 0.050
$\Upsilon(2S)$	7.95%	$\pm$ 0.77	$\pm$ 0.061	$\pm$ 0.67	2.04% $\pm$ 0.14
$\Upsilon(3S)$	5.48%	$\pm$ 0.67	$\pm$ 0.11	$\pm$ 0.28	2.30% $\pm$ 0.17

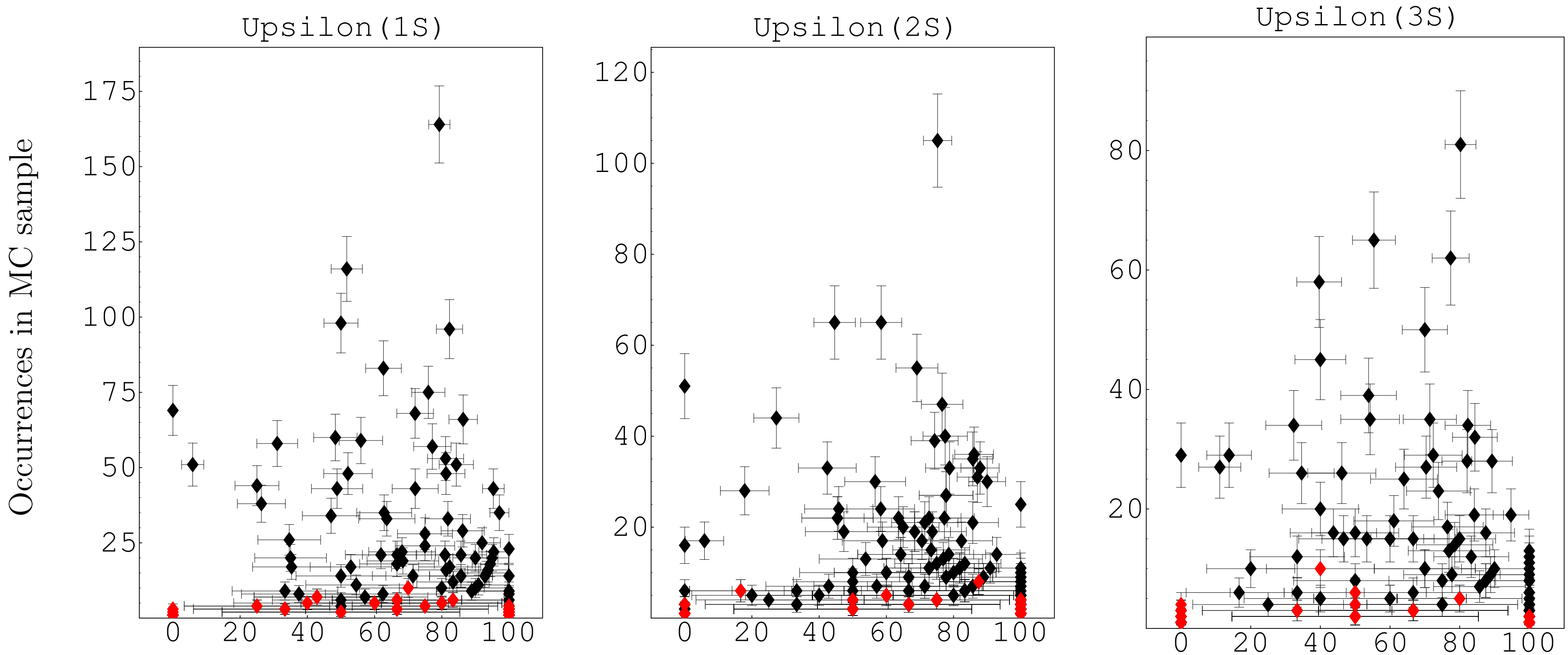


Cut efficiency for each $\Upsilon \to \ldots \to X\mu^+\mu^-$ mode (red modes are from PHOTOS)

Resonance	Cut efficiency	Statisical Error	Variation with PDG mode uncertainties	Variation with fluctuating PHOTOS 30%	Branching fraction to this set of modes
$\Upsilon(1S)$	2.81%	$\pm$ 0.33	$\pm$ 0	$\pm$ 0.83	2.480% $\pm$ 0.050
$\Upsilon(2S)$	3.83%	$\pm$ 0.51	$\pm$ 0.076	$\pm$ 0.82	2.04% $\pm$ 0.14
$\Upsilon(3S)$	4.37%	$\pm$ 0.54	$\pm$ 0.11	$\pm$ 1.03	2.31% $\pm$ 0.18



Resonance	Cut efficiency	Statisical Error	Variation with PDG mode uncertainties	Variation with fluctuating PHOTOS 30%	Branching fraction to this set of modes
$\Upsilon(1S)$	66.5%	$\pm$ 1.1	$\pm$ 0	$\pm$ 0.11	2.480% $\pm$ 0.050
$\Upsilon(2S)$	70.1%	$\pm$ 1.2	$\pm$ 0.32	$\pm$ 0.092	2.04% $\pm$ 0.14
$\Upsilon(3S)$	67.8%	$\pm$ 1.3	$\pm$ 0.32	$\pm$ 0.056	2.32% $\pm$ 0.18



Cut efficiency for each $\Upsilon \to \ldots \to X\tau^+\tau^-$, $\tau^+\tau^- \to Y$ mode (red modes are from PHOTOS)

Resonance	Cut efficiency	Statisical Error	Variation with PDG mode uncertainties	Variation with fluctuating PHOTOS 30%	Branching fraction to this set of modes
$\Upsilon(1S)$	66.4%	$\pm$ 1.1	$\pm$ 0.088	$\pm$ 0.12	2.481% $\pm$ 0.050
$\Upsilon(2S)$	70.5%	$\pm$ 1.2	$\pm$ 0.44	$\pm$ 0.084	2.04% $\pm$ 0.14
$\Upsilon(3S)$	69.3%	$\pm$ 1.4	$\pm$ 0.52	$\pm$ 0.091	2.32% $\pm$ 0.17

		stat	vary modes	vary PHOTOS 30%	vary $\mathcal{B}(\frac{gg\gamma}{ggg})$ 33%
$\boxed{\Upsilon(1S)}$					
(PDG $\mathcal{B}_{\mu\mu}$)	$\epsilon_\Upsilon = 0.9380$	$\pm\ 0.0008$	$\pm$ 0.0009	$\pm\ 0.0039$	$\pm\ 0.0010$
(Istvan's $\mathcal{B}_{\mu\mu}$)	$\epsilon_\Upsilon = 0.9378$		0.0009		
$\boxed{\Upsilon(1S) \to \text{hadrons}}$					
(PDG $\mathcal{B}_{\mu\mu}$)	$\epsilon_{\Upsilon\to\text{had}} = 0.9942$	$\pm\ 0.0003$	$\pm$ 0	$\pm\ 0$	$\pm\ 0.0011$
(Istvan's $\mathcal{B}_{\mu\mu}$)	$\epsilon_{\Upsilon\to\text{had}} = 0.9942$		0		
$\boxed{\Upsilon(2S)}$					
(PDG $\mathcal{B}_{\mu\mu}$)	$\epsilon_\Upsilon = 0.9500$	$\pm\ 0.0007$	$\pm$ 0.0025	$\pm\ 0.0033$	$\pm\ 0.0008$
(Istvan's $\mathcal{B}_{\mu\mu}$)	$\epsilon_\Upsilon = 0.9365$		0.0011		
$\boxed{\Upsilon(2S) \to \text{hadrons}}$					
(PDG $\mathcal{B}_{\mu\mu}$)	$\epsilon_{\Upsilon\to\text{had}} = 0.9785$	$\pm\ 0.0005$	$\pm$ 0.0006	$\pm\ 0.0012$	$\pm\ 0.0009$
(Istvan's $\mathcal{B}_{\mu\mu}$)	$\epsilon_{\Upsilon\to\text{had}} = 0.9781$		0.0006		
$\boxed{\Upsilon(3S)}$					
(PDG $\mathcal{B}_{\mu\mu}$)	$\epsilon_\Upsilon = 0.9448$	$\pm\ 0.0007$	$\pm$ 0.0030	$\pm\ 0.0034$	$\pm\ 0.0009$
(Istvan's $\mathcal{B}_{\mu\mu}$)	$\epsilon_\Upsilon = 0.9325$		0.0017		
$\boxed{\Upsilon(3S) \to \text{hadrons}}$					
(PDG $\mathcal{B}_{\mu\mu}$)	$\epsilon_{\Upsilon\to\text{had}} = 0.9850$	$\pm\ 0.0004$	$\pm$ 0.0006	$\pm\ 0.0008$	$\pm\ 0.0008$
(Istvan's $\mathcal{B}_{\mu\mu}$)	$\epsilon_{\Upsilon\to\text{had}} = 0.9829$		0.0006		