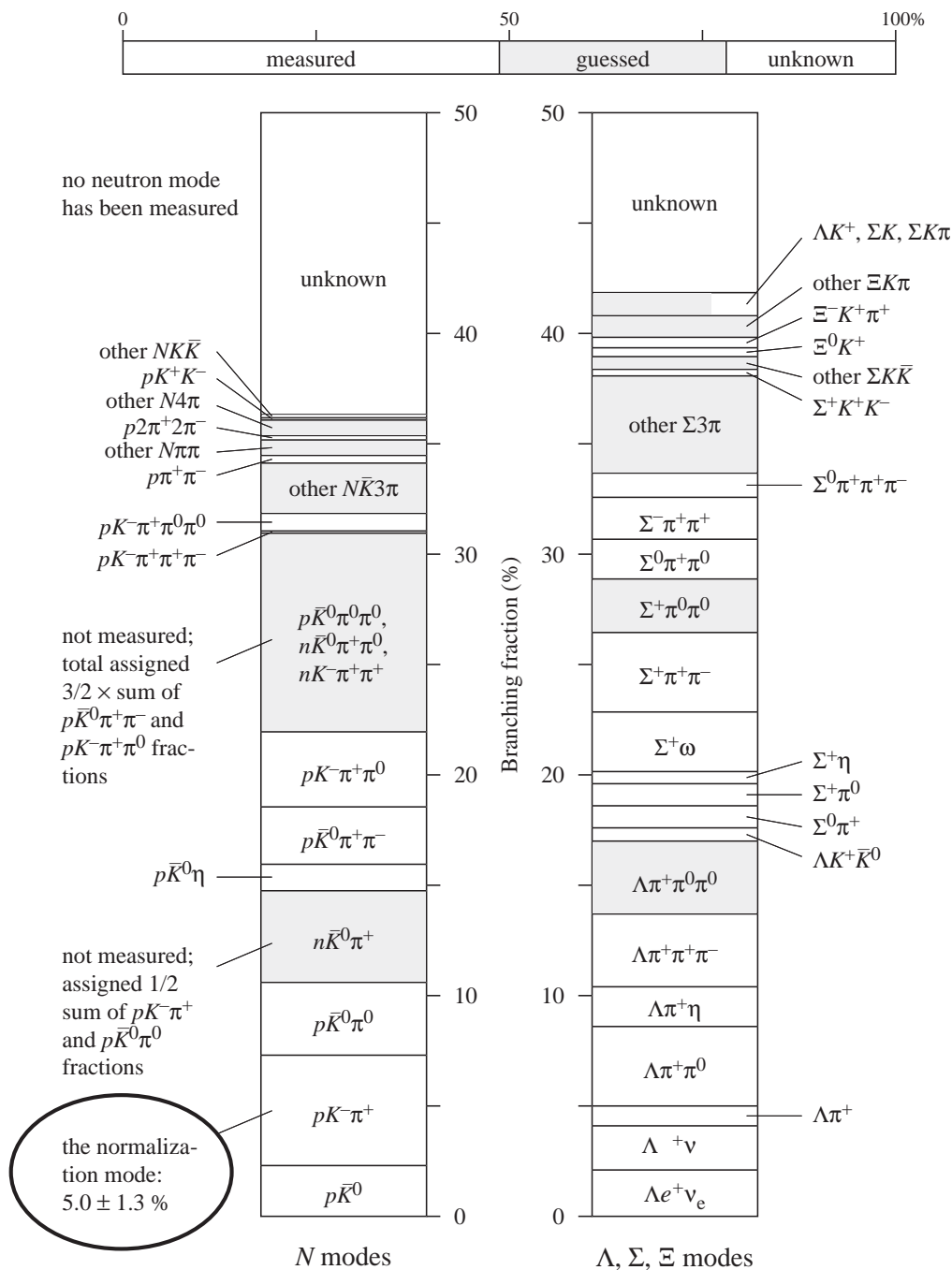
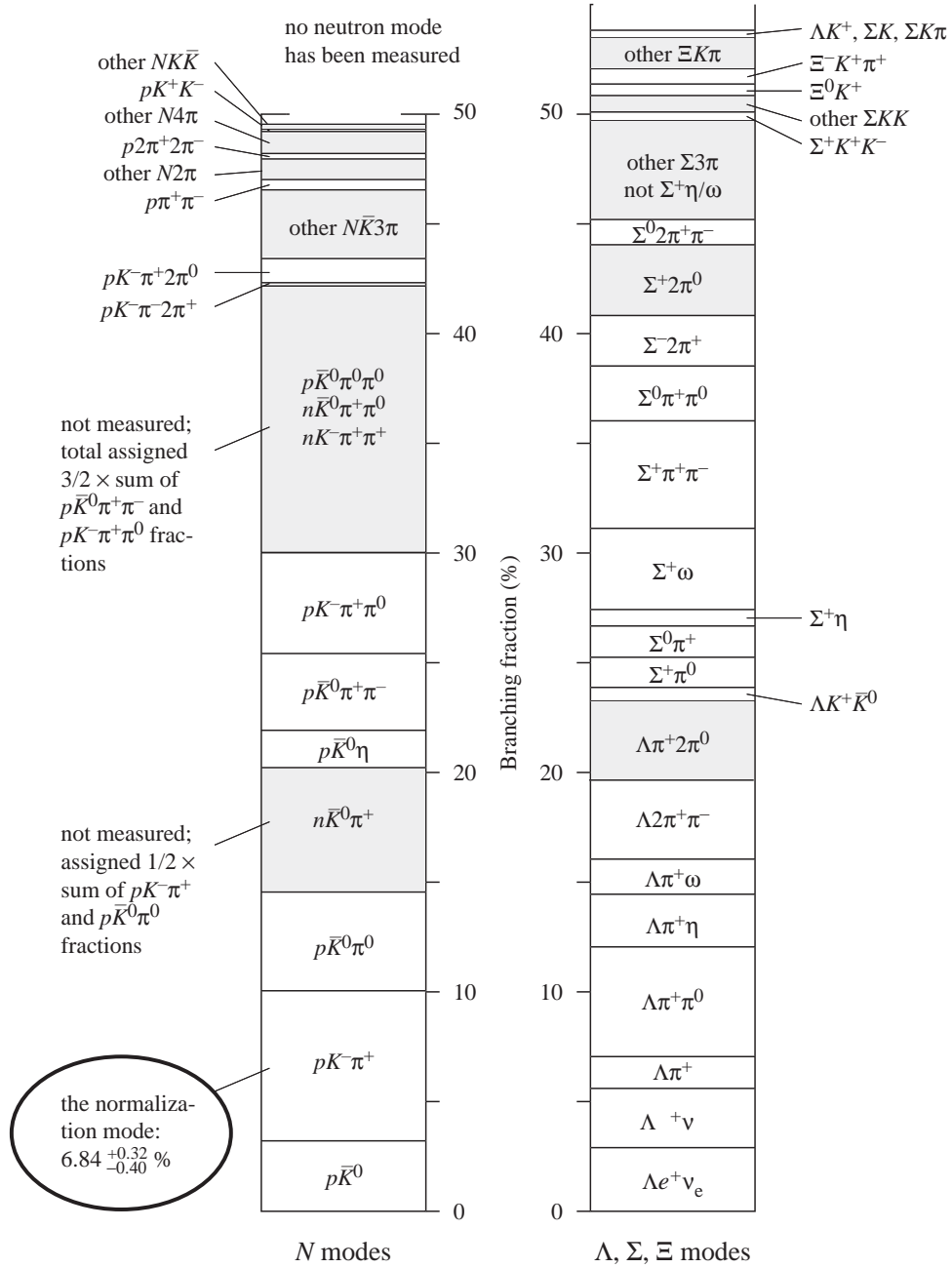


Figure 1. There are a lot of established c baryons, 17 in all.



**Figure 2.** The  $\Lambda_c$  branching fractions for the 2002–2014 Reviews. The normalization fraction is from two discordant, model-dependent measurements, with a  $\pm 26\%$  error.



**Figure 3.** The  $\Lambda_c$  branching fractions for 2015. The normalization fraction is from Zupanc et al., PRL 113 (2014) 042002, measuring  $e^+e^- \rightarrow D^{(*)-}\bar{p}\pi^+\Lambda_c^+$ . The error is now  $\pm 5.3\%$ .

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 **$\Xi_c^+$  DECAY MODES**


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Mode	Fraction ( $\Gamma_i/\Gamma$ )	Confidence level	
<b>No absolute branching fractions have been measured. The following are branching <i>ratios</i> relative to <math>\Xi^- 2\pi^+</math>.</b>			
<b>Cabibbo-favored (<math>S = -2</math>) decays — relative to <math>\Xi^- 2\pi^+</math></b>			
$\Gamma_1$	$p 2K_S^0$	$0.087 \pm 0.021$	
$\Gamma_2$	$\Lambda \bar{K}^0 \pi^+$	—	
$\Gamma_3$	$\Sigma(1385)^+ \bar{K}^0$	[a] $1.0 \pm 0.5$	
$\Gamma_4$	$\Lambda K^- 2\pi^+$	$0.323 \pm 0.033$	
$\Gamma_5$	$\Lambda \bar{K}^*(892)^0 \pi^+$	[a] $< 0.16$	90%
$\Gamma_6$	$\Sigma(1385)^+ K^- \pi^+$	[a] $< 0.23$	90%
$\Gamma_7$	$\Sigma^+ K^- \pi^+$	$0.94 \pm 0.10$	
$\Gamma_8$	$\Sigma^+ \bar{K}^*(892)^0$	[a] $0.81 \pm 0.15$	
$\Gamma_9$	$\Sigma^0 K^- 2\pi^+$	$0.27 \pm 0.12$	
$\Gamma_{10}$	$\Xi^0 \pi^+$	$0.55 \pm 0.16$	
$\Gamma_{11}$	$\Xi^- 2\pi^+$	<b>DEFINED AS 1</b>	
$\Gamma_{12}$	$\Xi(1530)^0 \pi^+$	[a] $< 0.10$	90%
$\Gamma_{13}$	$\Xi^0 \pi^+ \pi^0$	$2.3 \pm 0.7$	
$\Gamma_{14}$	$\Xi^0 \pi^- 2\pi^+$	$1.7 \pm 0.5$	
$\Gamma_{15}$	$\Xi^0 e^+ \nu_e$	$2.3 \begin{smallmatrix} +0.7 \\ -0.8 \end{smallmatrix}$	
$\Gamma_{16}$	$\Omega^- K^+ \pi^+$	$0.07 \pm 0.04$	
<b>Cabibbo-suppressed decays — relative to <math>\Xi^- 2\pi^+</math></b>			
$\Gamma_{17}$	$p K^- \pi^+$	$0.21 \pm 0.04$	
$\Gamma_{18}$	$p \bar{K}^*(892)^0$	[a] $0.116 \pm 0.030$	
$\Gamma_{19}$	$\Sigma^+ \pi^+ \pi^-$	$0.48 \pm 0.20$	
$\Gamma_{20}$	$\Sigma^- 2\pi^+$	$0.18 \pm 0.09$	
$\Gamma_{21}$	$\Sigma^+ K^+ K^-$	$0.15 \pm 0.06$	
$\Gamma_{22}$	$\Sigma^+ \phi$	[a] $< 0.11$	90%
$\Gamma_{23}$	$\Xi(1690)^0 K^+, \Xi(1690)^0 \rightarrow \Sigma^+ K^-$	$< 0.05$	90%

[a] This branching fraction includes all the decay modes of the final-state resonance.

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Figure 4. Even with no absolute fraction known, there is sometimes a better way than just putting “seen” for everything.

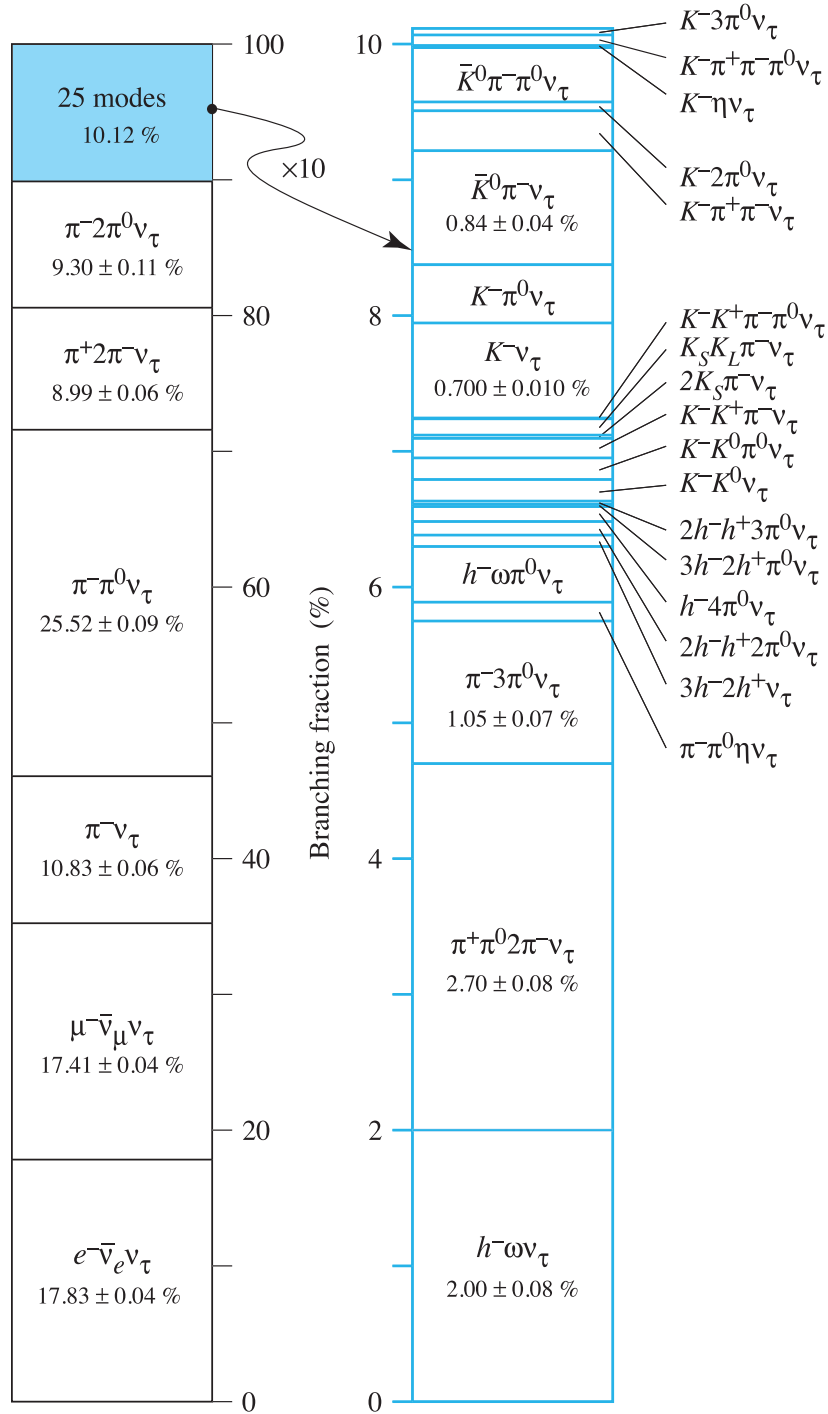
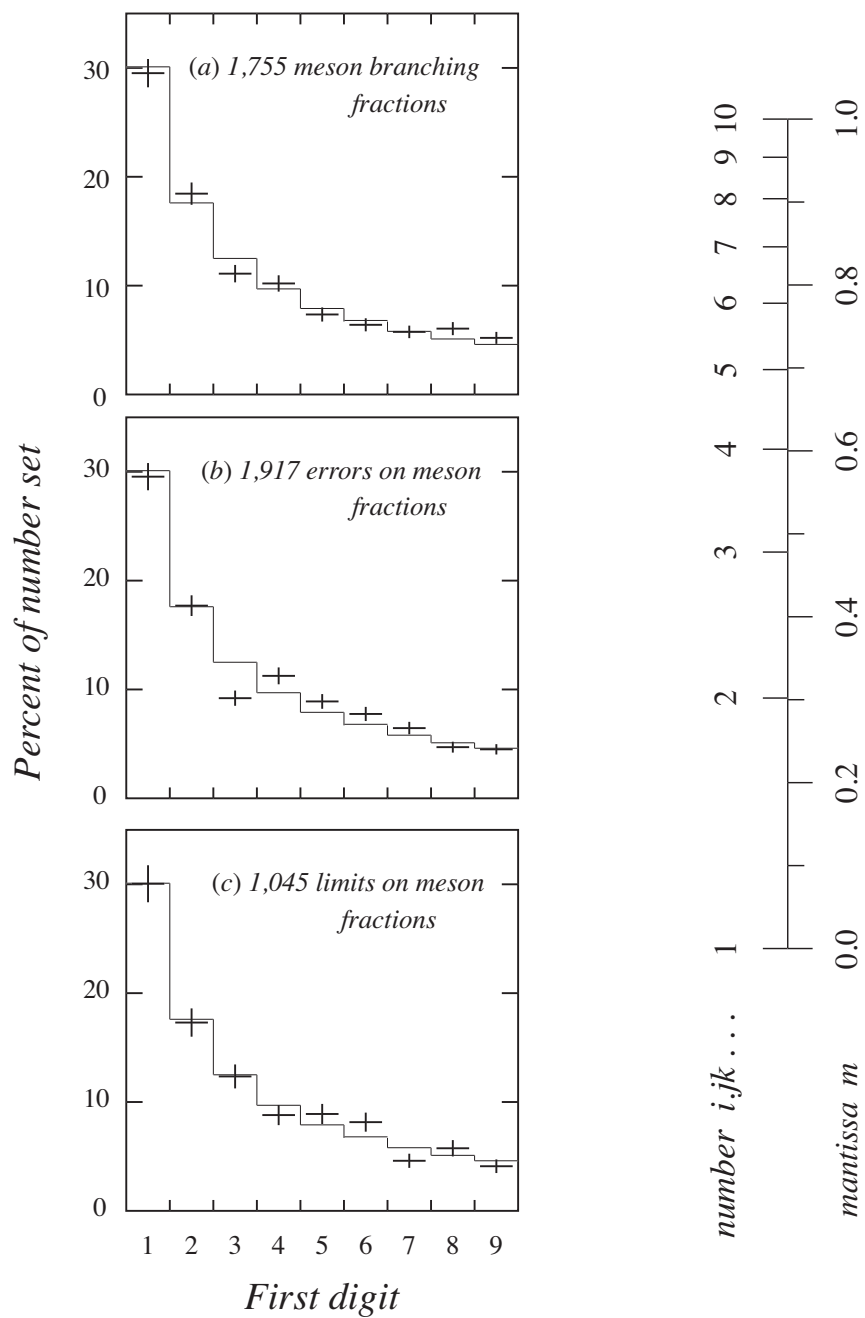
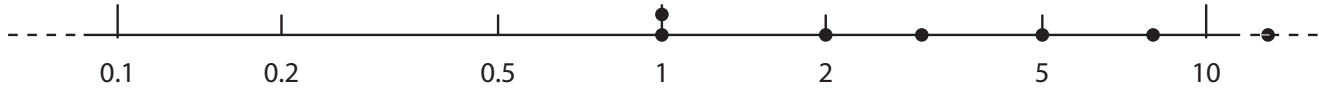


Figure 5. The 31 branching fractions of the  $\tau$ . Are there other particles that would look good this way?

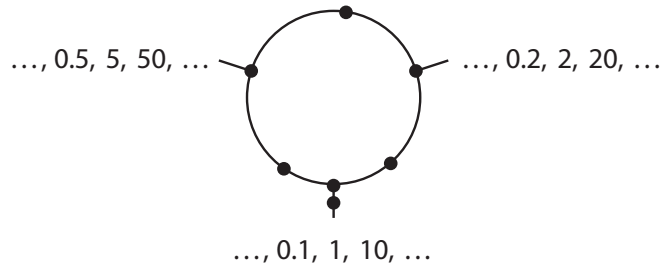


**Figure 6.** The distribution of first digits: (a) of meson branching fractions; (b) of errors on those fractions; and (c) of limits on rare or forbidden fractions. These distributions (and many others) obey Benford's first-digit law.

(a) Mark the numbers of a set along a string using a logarithmic scale.

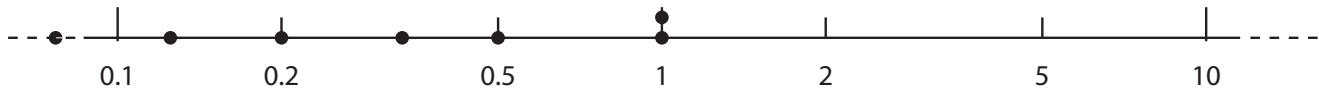


(b) Wrap the string around a circle whose circumference is the length of the string between 1 and 10.

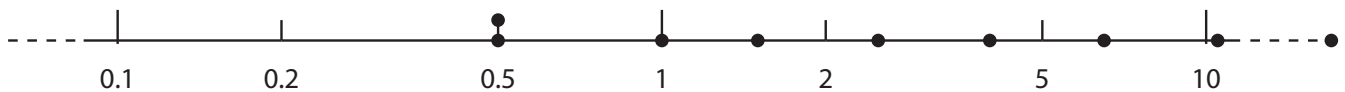


Benford's law is satisfied if the marks populate the circumference uniformly.

(c) Inverting reflects numbers across 1 on the string and across the vertical diameter on the circle.



(d) Rescaling shifts numbers the same distance on the string and through the same angle on the circle.



(e) A uniform population around the circle remains uniform after the inversion (c) or the rescaling (d).

**Figure 7. Proofs of inversion and scale invariance of a distribution that obeys Benford's law are reduced to symmetry operations on a circle. A few Fibonacci numbers are shown for illustration.**