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**Strong infrared lines among the lowest three even configurations**

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Two recent observational studies [1-2] of the infrared [Fe II]  $\lambda 12567/\lambda 16435$  line ratio suggest that the available theoretical A-values [3-4] for these transitions contains errors of up to 40%, although the two observations also differ to a similar extent. The empirically derived A-values [1] generally agree much more closely with [3] than with [4]. We have carried out a large scale CI calculation of [Fe II] lines covering the near infrared to far infrared spectrum, with a total of 72,492 configuration state functions (CSFs) for the 100 fine-structure levels belonging to the  $3d^64s$ ,  $3d^7$  and  $3d^54s^2$  configurations. Our results also tend to show much better agreement with [3] than with [4], and therefore with the empirical A-values of [1]. In particular, our calculated result for the ratio of the A-values of  $\lambda 12567$  and  $\lambda 16435$  is 1.04, in agreement with [3], while [1] obtain 1.13, only 9% higher, whereas [4] obtain 0.79, similar to the result implied in [2]; it is argued in [1] that such a low value is inconsistent with their observations. We anticipate that our new results will have a significant effect on the interpretation of other astrophysical observations.

[1] Smith N & Hartigan P, ApJ **638** (2006) 1045

[2] Rodriguez-Ardila A *et al* A & A **425** (2004) 457

[3] Nussbaumer H & Storey P J, A & A **193** (1988) 327

[4] Quinet P *et al* A & AS **120** (1996) 361

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