Relativistic distorted-wave collision strengths for the 16 $\Delta n = 0$ optically-allowed transitions with $n = 2$\(^1\) HONG LIN ZHANG, CHRISTOPHER J. FONTES, Los Alamos National Lab — Relativistic distorted-wave collision strengths have been calculated for the 16 $\Delta n = 0$ optically-allowed transitions with $n = 2$ in the 67 Be-like ions with nuclear charge number $Z$ in the range $26 \leq Z \leq 92$. The calculations were made for the four final, or scattered, electron energies $E' = 0.20, 0.42, 0.80, \text{and} 1.40$, where $E'$ is in units of $Z_{\text{eff}}^2 \text{Ry}$ with $Z_{\text{eff}} = Z - 2.5$. In the present calculations we used an improved “top-up” method, the relativistic Kummer transformation (Fontes & Zhang, Phys. Rev. A \textbf{76}, 040703(R) (2007)), to obtain high partial-wave contributions, in contrast to the semi-relativistic Coulomb-Bethe approximation used by Zhang & Sampson (ADNDT \textbf{52}, 143 (1992)). More extensive collision strengths for Be-like ions were provided in this previous publication, including data for all of the possible 45 transitions, for six scattered energies and in 85 ions with $Z$ in the range $8 \leq Z \leq 92$. The collision strengths covered in the present work should be more accurate and are presented as replacements for the corresponding results in Zhang & Sampson (1992).

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