The data presented in this article is related to the research article entitled "Electrochemical and electronic properties of a series of substituted polypyridine ligands and their Co(II) complexes" (Ferreira et al., 2019). This data article presents electrochemical data of five polypyridine ligands, as well as of the three redox couples of each of their corresponding five polypyridine-containing Co(II) complexes. All complexes exhibit two Co-based redox couples (Co_{III/II} and Co_{II/I}), as well as a ligand-based reduction of the Co(I) complex.

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Experimental factors

Samples were used as synthesized. The solvent-electrolyte solution in the electrochemical cell was degassed with Ar for 10 min, the sample was added, the sample-solvent-electrolyte solution was then degassed for another 2 min and the cell was kept under a blanket of purified argon during the electrochemical experiments.

Experimental features

All electrochemical experiments were done in a 2 ml electrochemical cell containing three-electrodes (a glassy carbon working electrode, a Pt auxiliary electrode and a Ag/Ag⁺ reference electrode), connected to a BAS 100B/W electrochemical analyzer. Data obtained was exported to excel for analysis and diagram preparation.

Data source location

Department of Chemistry, University of the Free State, Nelson Mandela Street, Bloemfontein, South Africa.

Data accessibility

Data is with article.

Related research article

Hendrik Ferreira, Marrigje M. Conradie and Jeanet Conradie, Electrochemical and electronic properties of a series of substituted polypyridine ligands and their Co(II) complexes, Inorganica Chimica Acta, 2019, 486, 26–35. DOI 10.1016/j.ica.2018.10.020 [1].

Value of the data

- This data provides cyclic voltammograms for five polypyridine ligands, 2,2'-6',2'-terpyridine (tpy, ligand 1a), 2,2'-dipyridyl (bpy, ligand 2a), 4,4'-dimethyl-2,2'-bipyridine (4,4'-di-Me-bpy, ligand 3a), 4,4'-di-tert-butyl-2,2'-dipyridyl (4,4'-di-t-Bu-bpy, ligand 4a) and 4,4'-dimethoxy-2,2'-bipyridine (4,4'-di-OMe-bpy, ligand 5a).
- This data provides cyclic voltammograms and detailed electrochemical data for Co(tpy)₂(NO₃)₂, complex 1, Co(bpy)₃(NO₃)₂, complex 2, Co(4,4'-di-Me-bpy)₃(NO₃)₂, complex 3, Co(4,4'-di-t-Bu-bpy)₃(NO₃)₂, complex 4 and Co(4,4'-di-OMe-bpy)NO₃, complex 5.
- The current contribution is the first to present complete electrochemical data for all three reversible redox peaks at different scan rates, over two orders of magnitudes, for terpyridine-Co(II), bipyridine-Co(II), as well as substituted bipyridine-Co(II) complexes.
- Accurate redox data is important to determine the potential of a compound, in order to determine its suitability to act as a redox mediator, to be used in dye-sensitized solar cells (DSSC) [2–4].

1. Data

Fig. 1 gives the structures of ligands 1a–5a and complexes 1–5. Fig. 2 shows the cyclic voltammetry (CV) scans for the polypyridyl free ligands 1a–5a at different scan rates (0.10 V s⁻¹ scans from [1]). Cyclic voltammograms of the complexes 1–5, showing four redox events each, are presented in

Fig. 1. Structure and numbering of the terpyridine (1a) and substituted bipyridine (2a–5a) ligands, as well as the terpyridine-Co(II) complex 1 and substituted bipyridine-Co(II) complexes, 2–5.
Figs. 3–8 (0.10 V s⁻¹ scans from [1]), with the data summarized in Tables 1–5. The redox events are the CoIII/II redox couple (peak 1), the CoII/I redox couple (peak 2) and the ligand reduction peak (peak 3), as well as an irreversible peak at ca. 1.63 V vs FcH/FcH⁺ (preliminary assigned to anionic nitrate oxidation). The data obtained in this data article, compares well with available published data on some of the redox events for some of the complexes, namely complex 1 [5–10], complex 2 [11–13] and complex 5 [11]; obtained under different experimental conditions (different solvents, scan rates...
Fig. 3. Cyclic voltammograms of complex 1, [Co(tpy)$_2$](NO$_3$)$_2$, at scan rates of 0.05 V s$^{-1}$ (lowest peak current) – 5.00 V s$^{-1}$ (highest peak current). All scans were initiated in the positive direction from 1 V. Data is summarized in Table 1.

Fig. 4. The linear relationship between the peak currents ($i_p$) vs the square root of the scan rate ($\nu^{1/2}$) for the three main redox events, in the CV of [Co(tpy)$_2$](NO$_3$)$_2$ (complex 1) in Fig. 3. This relationship can be described by the linear Randles–Sevcik equation $i_p=(2.69\times10^5)n^{1/2}A^{1/2}D^{1/2}C^{0.5}$ ($n$ = the number of exchanged electrons, $A$ = electrode area (cm$^2$), $D$ = diffusion coefficient (cm$^2$ s$^{-1}$), $C$ = bulk concentration (mol cm$^{-3}$) of the electroactive species.
Fig. 5. Cyclic voltammograms of [Co(bpy)$_2$](NO$_3$)$_2$ (complex 2), at scan rates of 0.05 V s$^{-1}$ (lowest peak current) – 5.00 V s$^{-1}$ (highest peak current). All scans were initiated in the positive direction from 1 V. Data is summarized in Table 2.

Fig. 6. Cyclic voltammograms of [Co(4,4'-Me-bpy)$_2$](NO$_3$)$_2$ (complex 3), at scan rates of 0.05 V s$^{-1}$ (lowest peak current) – 5.00 V s$^{-1}$ (highest peak current). All scans were initiated in the positive direction from 1 V. Data is summarized in Table 3.

Fig. 7. Cyclic voltammograms of [Co(4,4'-Bu-bpy)$_2$](NO$_3$)$_2$ (complex 4), at scan rates of 0.05 V s$^{-1}$ (lowest peak current) – 5.00 V s$^{-1}$ (highest peak current). All scans were initiated in the positive direction from 1 V. Data is summarized in Table 4.
Fig. 8. Cyclic voltammograms of [Co(4,4′-OMe-bpy)$_2$][NO$_3$]$_2$ (complex 5), at scan rates of 0.05 V s$^{-1}$ (lowest peak current) – 5.00 V s$^{-1}$ to 5.00 V s$^{-1}$ (highest peak current). All scans were initiated in the positive direction from 1 V. Data is summarized in Table 5.

Table 1
Electrochemical data (potential in V vs FcH+/FcH$^+$ and current in A) obtained in CH$_3$CN for ca. 0.002 mol dm$^{-3}$ of [Co(tpy)$_2$](NO$_3$)$_2$ (complex 1), at indicated scan rates in V s$^{-1}$. Peak 1 is the Co$^{III}$/II redox couple, peak 2 the Co$^{II}$/I redox couple and peak 3 the ligand reduction peak.Pl

| Scan rate | $E_{pa}$ | $E_{pc}$ | $E^{o}$ | $\Delta E$ | $10^6 I_{pa}$ | $I_{pc}/I_{pa}$ |
|-----------|---------|---------|--------|-----------|-------------|---------------|
| Peak 1    |         |         |        |           |             |               |
| 0.05      | −0.090  | −0.174  | −0.132 | 0.084     | 28.0        | 1.0           |
| 0.10      | −0.094  | −0.178  | −0.136 | 0.084     | 40.0        | 1.0           |
| 0.20      | −0.088  | −0.184  | −0.136 | 0.096     | 63.5        | 1.0           |
| 0.30      | −0.080  | −0.192  | −0.136 | 0.112     | 80.0        | 1.0           |
| 0.40      | −0.072  | −0.208  | −0.140 | 0.136     | 98.0        | 1.0           |
| 0.50      | −0.072  | −0.202  | −0.137 | 0.130     | 115.0       | 1.0           |
| 1.00      | −0.054  | −0.208  | −0.131 | 0.154     | 113.0       | 1.0           |
| 2.00      | −0.030  | −0.234  | −0.132 | 0.204     | 165.0       | 1.0           |
| 5.00      | 0.026   | −0.294  | −0.134 | 0.320     | 248.0       | 1.0           |
| Peak 2    |         |         |        |           |             |               |
| 0.05      | −1.148  | −1.230  | −1.189 | 0.082     | 27.0        | 1.0           |
| 0.10      | −1.146  | −1.232  | −1.189 | 0.086     | 39.5        | 1.0           |
| 0.20      | −1.140  | −1.240  | −1.190 | 0.100     | 67.0        | 1.0           |
| 0.30      | −1.134  | −1.248  | −1.191 | 0.114     | 84.5        | 1.0           |
| 0.40      | −1.130  | −1.262  | −1.196 | 0.132     | 99.0        | 1.0           |
| 0.50      | −1.126  | −1.262  | −1.194 | 0.136     | 118.0       | 1.0           |
| 1.00      | −1.116  | −1.274  | −1.195 | 0.158     | 115.0       | 1.0           |
| 2.00      | −1.098  | −1.308  | −1.203 | 0.210     | 168.0       | 1.0           |
| 5.00      | −1.058  | −1.378  | −1.218 | 0.320     | 263.0       | 1.0           |
| Peak 3    |         |         |        |           |             |               |
| 0.05      | −2.028  | −2.120  | −2.074 | 0.092     | 30.0        | 1.0           |
| 0.10      | −2.030  | −2.120  | −2.075 | 0.090     | 38.0        | 1.1           |
| 0.20      | −2.022  | −2.128  | −2.075 | 0.106     | 61.5        | 1.1           |
| 0.30      | −2.020  | −2.138  | −2.079 | 0.118     | 89.0        | 1.0           |
| 0.40      | −2.020  | −2.154  | −2.087 | 0.134     | 90.0        | 1.1           |
| 0.50      | −2.014  | −2.148  | −2.081 | 0.134     | 110.0       | 1.1           |
| 1.00      | −2.012  | −2.174  | −2.093 | 0.162     | 110.0       | 1.1           |
| 2.00      | −2.006  | −2.208  | −2.107 | 0.202     | 155.0       | 1.1           |
| 5.00      | −1.990  | −2.290  | −2.140 | 0.300     | 205.0       | 1.2           |
**Table 2**
Electrochemical data (potential in V vs FcH/FcH⁺ and current in A) obtained in CH₂CN for ca. 0.002 mol dm⁻³ of [Co(bpy)₃](NO₃)₂ (complex 2), at indicated scan rates in V s⁻¹. Peak 1 is the CoIII/II redox couple, peak 2 the CoIII/I redox couple and peak 3 the ligand reduction peak.

| Scan rate | \( E_{pa} \) | \( E_{pc} \) | \( E^{\infty} \) | \( \Delta E \) | \( 10^9I_{pa} \) | \( I_{pc}/I_{pa} \) |
|-----------|-------------|-------------|-------------|-------------|----------------|----------------|
| Peak 1    |             |             |             |             |                 |                |
| 0.05      | –0.038     | –0.120      | –0.079      | 0.082       | 16.5           | 1.0            |
| 0.10      | –0.038     | –0.124      | –0.081      | 0.086       | 23.0           | 1.1            |
| 0.20      | –0.032     | –0.128      | –0.080      | 0.096       | 34.0           | 1.1            |
| 0.30      | –0.016     | –0.134      | –0.075      | 0.118       | 36.5           | 1.2            |
| 0.40      | –0.002     | –0.140      | –0.071      | 0.138       | 43.0           | 1.2            |
| 0.50      | 0.000      | –0.144      | –0.072      | 0.144       | 46.0           | 1.2            |
| 1.00      | 0.008      | –0.150      | –0.071      | 0.158       | 49.0           | 1.2            |
| 2.00      | 0.034      | –0.168      | –0.067      | 0.202       | 66.0           | 1.4            |
| 5.00      | 0.086      | –0.216      | –0.065      | 0.302       | 100.0          | 1.4            |
| Peak 2    |             |             |             |             |                 |                |
| 0.05      | –1.332     | –1.402      | –1.367      | 0.070       | 16.5           | 1.1            |
| 0.10      | –1.334     | –1.404      | –1.369      | 0.070       | 23.5           | 0.9            |
| 0.20      | –1.330     | –1.412      | –1.371      | 0.082       | 35.0           | 1.1            |
| 0.30      | –1.324     | –1.416      | –1.370      | 0.092       | 40.0           | 1.2            |
| 0.40      | –1.320     | –1.420      | –1.370      | 0.100       | 45.0           | 1.3            |
| 0.50      | –1.318     | –1.426      | –1.372      | 0.108       | 55.0           | 1.2            |
| 1.00      | –1.316     | –1.428      | –1.372      | 0.112       | 56.0           | 1.2            |
| 2.00      | –1.304     | –1.448      | –1.376      | 0.144       | 83.0           | 1.2            |
| 5.00      | –1.288     | –1.500      | –1.394      | 0.212       | 120.0          | 1.3            |
| Peak 3    |             |             |             |             |                 |                |
| 0.05      | –1.950     | –2.028      | –1.989      | 0.078       | 33.5           | 1.1            |
| 0.10      | –1.946     | –2.032      | –1.989      | 0.086       | 46.5           | 1.2            |
| 0.20      | –1.944     | –2.048      | –1.996      | 0.104       | 57.0           | 1.5            |
| 0.30      | –1.934     | –2.052      | –1.993      | 0.118       | 83.0           | 1.2            |
| 0.40      | –1.932     | –2.062      | –1.997      | 0.130       | 96.0           | 1.2            |
| 0.50      | –1.930     | –2.066      | –1.998      | 0.136       | 110.0          | 1.2            |
| 1.00      | –1.928     | –2.078      | –2.003      | 0.150       | 118.0          | 1.2            |
| 2.00      | –1.920     | –2.116      | –2.018      | 0.196       | 156.0          | 1.3            |
| 5.00      | –1.906     | –2.186      | –2.046      | 0.280       | 230.0          | 1.3            |

**Table 3**
Electrochemical data (potential in V vs FcH/FcH⁺ and current in A) obtained in CH₂CN for ca. 0.002 mol dm⁻³ of [Co(4,4'-Me-bpy)₃](NO₃)₂ (complex 3), at indicated scan rates in V s⁻¹. Peak 1 is the CoIII/II redox couple, peak 2 the CoIII/I redox couple and peak 3 the ligand reduction peak.

| Scan rate | \( E_{pa} \) | \( E_{pc} \) | \( E^{\infty} \) | \( \Delta E \) | \( 10^9I_{pa} \) | \( I_{pc}/I_{pa} \) |
|-----------|-------------|-------------|-------------|-------------|----------------|----------------|
| Peak 1    |             |             |             |             |                 |                |
| 0.05      | –0.166     | –0.262      | –0.214      | 0.096       | 10.0           | 1.2            |
| 0.10      | –0.162     | –0.264      | –0.213      | 0.102       | 15.0           | 1.2            |
| 0.20      | –0.152     | –0.268      | –0.210      | 0.116       | 20.0           | 1.4            |
| 0.30      | –0.146     | –0.274      | –0.210      | 0.128       | 25.5           | 1.4            |
| 0.40      | –0.132     | –0.276      | –0.204      | 0.144       | 28.5           | 1.5            |
| 0.50      | –0.132     | –0.284      | –0.208      | 0.152       | 33.0           | 1.4            |
| 1.00      | –0.104     | –0.296      | –0.200      | 0.192       | 44.0           | 1.6            |
| 2.00      | –0.058     | –0.318      | –0.188      | 0.260       | 58.0           | 1.7            |
| 5.00      | 0.040      | –0.352      | –0.156      | 0.392       | 95.0           | 1.5            |
| Peak 2    |             |             |             |             |                 |                |
| 0.05      | –1.482     | –1.546      | –1.514      | 0.064       | 11.5           | 1.0            |
| 0.10      | –1.486     | –1.548      | –1.517      | 0.062       | 16.0           | 1.1            |
| 0.20      | –1.482     | –1.554      | –1.518      | 0.072       | 22.5           | 1.2            |
| 0.30      | –1.480     | –1.562      | –1.521      | 0.082       | 28.0           | 1.2            |
| 0.40      | –1.476     | –1.564      | –1.520      | 0.088       | 34.0           | 1.2            |
| 0.50      | –1.478     | –1.568      | –1.523      | 0.090       | 40.0           | 1.2            |
| 1.00      | –1.468     | –1.578      | –1.523      | 0.110       | 57.0           | 1.3            |
| 2.00      | –1.464     | –1.598      | –1.531      | 0.134       | 88.0           | 1.4            |
| 5.00      | –1.440     | –1.636      | –1.538      | 0.196       | 155.0          | 1.0            |
and supporting electrolytes). The linear responses obtained for the graphs of the peak currents vs the square root of the scan rate, for three main redox events in the CV of complex 1 (see Fig. 4), are in agreement with the Randles–Sevcik equation [14].

2. Experimental design, materials, and methods

Electrochemical studies, by means of cyclic voltammetry (CV), were performed at 25 °C on a BAS 100B/W electrochemical analyser under inert conditions as described previously [1]. The concentration of the analyte was 0.002 mol dm⁻³ or saturated. The solvent was dry acetonitrile and the

| Table 3 (continued) |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Scan rate | \(E_{pa}\) | \(E_{pc}\) | \(E^{\circ}\) | \(\Delta E\) | \(10^{6}I_{pa}\) | \(I_{pc}/I_{pa}\) |
| Peak 3 0.05 | -2.068 | -2.138 | -2.103 | 0.070 | 23.0 | 1.2 |
| 0.10 | -2.070 | -2.144 | -2.107 | 0.074 | 340.0 | 1.2 |
| 0.20 | -2.066 | -2.154 | -2.110 | 0.088 | 50.5 | 1.2 |
| 0.30 | -2.062 | -2.164 | -2.113 | 0.102 | 65.0 | 1.2 |
| 0.40 | -2.056 | -2.166 | -2.111 | 0.110 | 75.0 | 1.2 |
| 0.50 | -2.058 | -2.172 | -2.115 | 0.114 | 90.0 | 1.2 |
| 1.00 | -2.048 | -2.190 | -2.119 | 0.142 | 123.0 | 1.2 |
| 2.00 | -2.042 | -2.220 | -2.131 | 0.178 | 174.0 | 1.2 |
| 5.00 | -2.022 | -2.280 | -2.151 | 0.258 | 240.0 | 1.4 |

| Table 4 |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Electrochemical data (potential in V vs FcH/FcH⁺ and current in A) obtained in CH₃CN for ca. 0.002 mol dm⁻³ of [Co(4,4'-tBu-bpy)₂(NO₃)₂] (complex 4), at indicated scan rates in V s⁻¹. Peak 1 is the CoIII/II redox couple, peak 2 the CoII/I redox couple and peak 3 the ligand reduction peak.|
| Scan rate | \(E_{pa}\) | \(E_{pc}\) | \(E^{\circ}\) | \(\Delta E\) | \(10^{6}I_{pa}\) | \(I_{pc}/I_{pa}\) |
| Peak 1 0.05 | -0.184 | -0.294 | -0.239 | 0.110 | 13.0 | 1.2 |
| 0.10 | -0.174 | -0.302 | -0.238 | 0.128 | 20.5 | 1.2 |
| 0.20 | -0.144 | -0.298 | -0.221 | 0.154 | 21.0 | 1.4 |
| 0.30 | -0.044 | -0.310 | -0.177 | 0.266 | 21.5 | 1.6 |
| 0.40 | 0.020 | -0.312 | -0.146 | 0.332 | 25.0 | 1.6 |
| 0.50 | 0.002 | -0.316 | -0.157 | 0.318 | 28.0 | 1.6 |
| 1.00 | -0.088 | -0.328 | -0.208 | 0.240 | 55.0 | 1.3 |
| 2.00 | 0.050 | -0.358 | -0.154 | 0.408 | 48.0 | 1.8 |
| 5.00 | 0.114 | -0.402 | -0.144 | 0.516 | 53.0 | 2.4 |
| Peak 2 0.05 | -1.448 | -1.516 | -1.482 | 0.068 | 14.0 | 0.9 |
| 0.10 | -1.448 | -1.520 | -1.484 | 0.072 | 24.0 | 1.1 |
| 0.20 | -1.444 | -1.520 | -1.482 | 0.076 | 25.0 | 1.2 |
| 0.30 | -1.440 | -1.530 | -1.485 | 0.090 | 32.0 | 1.2 |
| 0.40 | -1.434 | -1.532 | -1.483 | 0.098 | 36.0 | 1.3 |
| 0.50 | -1.434 | -1.536 | -1.485 | 0.102 | 43.0 | 1.3 |
| 1.00 | -1.426 | -1.548 | -1.487 | 0.122 | 65.0 | 1.3 |
| 2.00 | -1.418 | -1.574 | -1.496 | 0.156 | 82.0 | 1.4 |
| 5.00 | -1.400 | -1.616 | -1.508 | 0.216 | 126.0 | 1.3 |
| Peak 3 0.05 | -2.034 | -2.130 | -2.082 | 0.096 | 28.0 | 1.3 |
| 0.10 | -2.046 | -2.140 | -2.093 | 0.094 | 42.5 | 1.3 |
| 0.20 | -2.046 | -2.146 | -2.096 | 0.100 | 45.0 | 1.4 |
| 0.30 | -2.040 | -2.156 | -2.098 | 0.116 | 56.0 | 1.4 |
| 0.40 | -2.038 | -2.162 | -2.100 | 0.124 | 67.0 | 1.3 |
| 0.50 | -2.038 | -2.164 | -2.101 | 0.126 | 75.0 | 1.4 |
| 1.00 | -2.028 | -2.190 | -2.109 | 0.162 | 115.0 | 1.3 |
| 2.00 | -2.028 | -2.222 | -2.125 | 0.194 | 136.0 | 1.4 |
| 5.00 | -2.012 | -2.288 | -2.150 | 0.276 | 195.0 | 1.5 |
supporting electrolyte 0.1 mol dm$^{-3}$ tetra-$n$-butylammoniumhexafluorophosphate ($\text{[n(Bu}_4\text{N)}\text{][PF}_6]$). A three-electrode cell comprising of a glassy carbon (surface area $7.07 \times 10^{-6}$ m$^2$) working electrode, Pt auxiliary electrode and a Ag/Ag$^{+}$ (0.010 mol dm$^{-3}$ AgNO$_3$ in CH$_3$CN) reference electrode [15], mounted on a Luggin capillary [16] was used.

**Acknowledgments**

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**Transparency document. Supporting information**

Transparency document associated with this article can be found in the online version at https://doi.org/10.1016/j.dib.2018.12.043.

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**Table 5**

Electrochemical data (potential in V vs FeH/FeH$^{+}$ and current in A) obtained in CH$_3$CN for ca. 0.002 mol dm$^{-3}$ of $\text{[Co(4,4’-OMe-bpy)}_2\text{][NO}_3$ (complex $\text{5}$), at indicated scan rates in V s$^{-1}$. Peak 1 is the Co$^{III/II}$ redox couple, peak 2 the Co$^{II/I}$ redox couple and peak 3 the ligand reduction peak.

| Scan rate | $E_{pa}$ | $E_{pc}$ | $E'$ | $\Delta E$ | $10^3I_{pa}$ | $I_{pc}/I_{pa}$ |
|-----------|----------|----------|-------|------------|-------------|----------------|
| Peak 1    |          |          |       |            |             |                |
| 0.05      | $-0.218$ | $-0.314$ | $-0.266$ | 0.096 | 13.0 | 1.2 |
| 0.10      | $-0.216$ | $-0.316$ | $-0.266$ | 0.100 | 19.0 | 1.2 |
| 0.20      | $-0.210$ | $-0.324$ | $-0.267$ | 0.114 | 29.5 | 1.2 |
| 0.30      | $-0.192$ | $-0.330$ | $-0.261$ | 0.138 | 33.0 | 1.3 |
| 0.40      | $-0.196$ | $-0.338$ | $-0.267$ | 0.142 | 40.0 | 1.3 |
| 0.50      | $-0.192$ | $-0.340$ | $-0.266$ | 0.148 | 47.0 | 1.2 |
| 1.00      | $-0.170$ | $-0.366$ | $-0.268$ | 0.196 | 64.0 | 1.3 |
| 2.00      | $-0.146$ | $-0.390$ | $-0.268$ | 0.244 | 93.0 | 1.2 |
| 5.00      | $-0.072$ | $-0.434$ | $-0.253$ | 0.362 | 135.0 | 1.2 |
| Peak 2    |          |          |       |            |             |                |
| 0.05      | $-1.640$ | $-1.706$ | $-1.673$ | 0.066 | 13.0 | 1.1 |
| 0.10      | $-1.638$ | $-1.708$ | $-1.673$ | 0.070 | 18.0 | 1.2 |
| 0.20      | $-1.638$ | $-1.714$ | $-1.676$ | 0.076 | 22.5 | 1.5 |
| 0.30      | $-1.634$ | $-1.728$ | $-1.681$ | 0.094 | 37.5 | 1.1 |
| 0.40      | $-1.636$ | $-1.724$ | $-1.680$ | 0.088 | 34.0 | 1.6 |
| 0.50      | $-1.632$ | $-1.728$ | $-1.680$ | 0.096 | 40.0 | 1.5 |
| 1.00      | $-1.628$ | $-1.744$ | $-1.686$ | 0.116 | 53.0 | 2.0 |
| 2.00      | $-1.608$ | $-1.778$ | $-1.693$ | 0.170 | 87.0 | 1.5 |
| 5.00      | $-1.588$ | $-1.818$ | $-1.703$ | 0.230 | 120.0 | 1.8 |
| Peak 3    |          |          |       |            |             |                |
| 0.05      | $-2.084$ | $-2.178$ | $-2.131$ | 0.094 | 14.0 | 1.7 |
| 0.10      | $-2.102$ | $-2.180$ | $-2.141$ | 0.078 | 17.0 | 2.3 |
| 0.20      | $-2.122$ | $-2.196$ | $-2.159$ | 0.074 | 27.5 | 2.3 |
| 0.30      | $-2.118$ | $-2.216$ | $-2.167$ | 0.098 | 48.0 | 1.7 |
| 0.40      | $-2.120$ | $-2.210$ | $-2.165$ | 0.090 | 51.0 | 2.0 |
| 0.50      | $-2.116$ | $-2.214$ | $-2.165$ | 0.098 | 65.0 | 1.8 |
| 1.00      | $-2.110$ | $-2.238$ | $-2.174$ | 0.128 | 99.0 | 1.6 |
| 2.00      | $-2.090$ | $-2.296$ | $-2.193$ | 0.206 | 156.0 | 1.4 |
| 5.00      | $-2.072$ | $-2.356$ | $-2.214$ | 0.284 | 250.0 | 1.4 |
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