

# Magnetic diffusion, inductive shielding, and the Laplace transform (Supplemental Material)

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In preparing this manuscript, we compiled an extensive – but certainly not exhaustive – catalogue of recent pedagogical papers that are related to the interaction of magnetic fields and conducting materials. We have attempted to group them here in a list of references by common theme: forces on moving magnets and MAGLEV;<sup>1–4</sup> magnetic braking;<sup>5–15</sup> permanent magnets sliding down conductive planes<sup>16–19</sup> or falling through conductive tubes;<sup>20–34</sup> eddy currents, skin depth, and inductive shielding;<sup>35–48</sup> and Thomson’s jumping ring.<sup>49–54</sup> There is significant overlap in the content of these and other related papers,<sup>55–60</sup> of course, and such groupings

cannot be considered exclusive. Still it is hoped this compilation will provide a convenient and fairly complete overview of the pedagogical literature on these topics and will also function as a quick guide for physics educators seeking new ideas and insights. Other more research-focused papers that we found useful are also listed here.<sup>61–64</sup>

In addition to the references cited in the main article regarding time-varying fields and conducting tubes, there are several other works on this topic<sup>65–70</sup> that may be of interest to the reader, as well.

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