

11. page 341, Chapter 7: Chapter 7 has been criticized as being "really hard," or something to that effect but more emphatic and poetic. I wholeheartedly agree – it took me years to learn this stuff.

Remember, as I said on page 343, one of the goals of this book is to give the most important results from Preisendorfer's *Hydrologic Optics*, and that's what I tried to do in this chapter. I thought that the use of the two-flow equations (rather than starting with the RTE) was a clever way to discuss fundamental and transport solutions (and other such things) with a *minimum* of math, as well as setting the stage for solving the RTE in Chapter 8. I know that the notation, with all of the $\mathbf{m}_{\pm\pm}$ and $\mathbf{M}_{\pm\pm}$ and so on, is confusing, but that is what is standard in the literature.

In Section 7.2 I tried to give an overview of what was coming in the chapter, but I failed to explain this at the beginning; my apologies. I should have emphasized that the ultimate goal of our development was to obtain the Riccati equations of Section 7.8, and I should have elaborated on the extreme importance of those equations: *it is the Riccati equations that give us the operators whose existence is guaranteed by the interaction principle*. In the present case, the linear interaction operators are the standard reflectances and transmittances, and the operation that converts incident irradiances into response irradiances is simple multiplication, as seen in Eqs. (7.47) and (7.48). Once again, note that we have transformed a problem in which we solve directly for the irradiances (by explicitly integrating the two-flow equations) into a problem in which we solve for certain "operators" (the reflectances and transmittances, as well as the source-induced irradiances, by integrating the Riccati equations). See Supplementary Note 3.