Drift Flux Method

The solution to equations (Nqa1) given the form of the drift flux function, $j_{AB}(\alpha)$, is most conveniently displayed in the graphical form shown in figure 1. Since equations (Nqa1) imply

$$j_{AB} = (1-\alpha)j_A - \alpha j_B \tag{Nqb1}$$

and since the right hand side of this equation can be plotted as the straight, dashed line in figure 1, it follows that the solution (the values of α and j_{AB}) is given by the intersection of this line and the known $j_{AB}(\alpha)$ curve. We shall refer to this as the operating point, OP. Note that the straight, dashed line is most readily identified by the intercepts with the vertical axes at $\alpha = 0$ and $\alpha = 1$. The $\alpha = 0$ intercept will be the value of j_A and the $\alpha = 1$ intercept will be the value of $-j_B$.

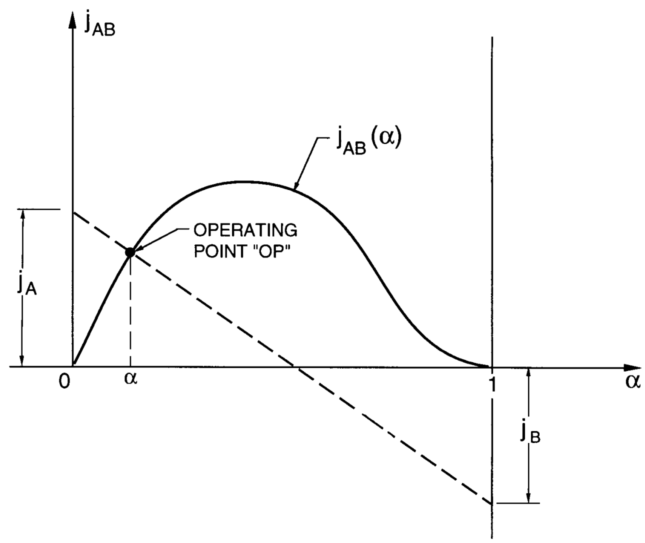

Figure 1: Basic graphical schematic or chart of the drift flux model.

To explore some of the details of flows modeled in this way, we shall consider several specific applications in the sections that follow. In the process we shall identify several phenomena that have broader relevance than the specific examples under consideration.