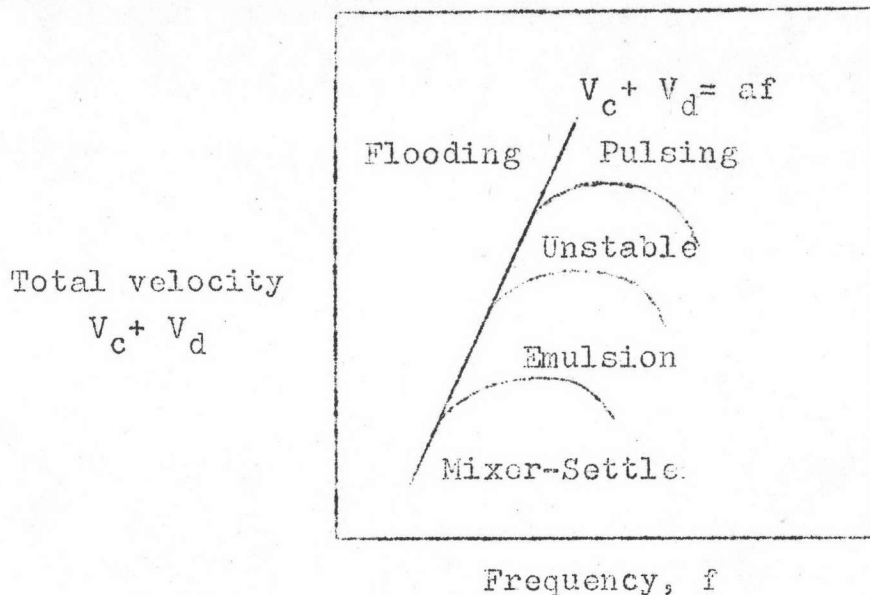




CHAPTER 3

REGIMES OF PULSED COLUMN OPERATION

Sege and Woodfield⁽¹⁰⁾ have observed various distinct regimes of operation of a pulsed column up to flooding, namely, the mixer-settler regimes, the emulsion regimes, the unstable regime and the complete pulsing regime and flooding regimes. See figure below.



The first regime, namely, the mixer-settler type, is inefficient for column operation. The emulsion regime characterized by uniform dispersion of one phase into another provides efficient operation due to intimate phase contact. In the third unstable regime, the dispersed drop show wide distribution in their sizes in different sections of the column due to irregular coalescence and reversal of phases making the operation unstable. With

this kind of dispersion, mass transfer rates can fluctuate widely, yielding generally low efficiencies. Complete pulsing and flooding regimes have been investigated by Edwards and Beyer⁽⁸⁾ who have given a theoretical analysis of column operation in relation to pulsing conditions.