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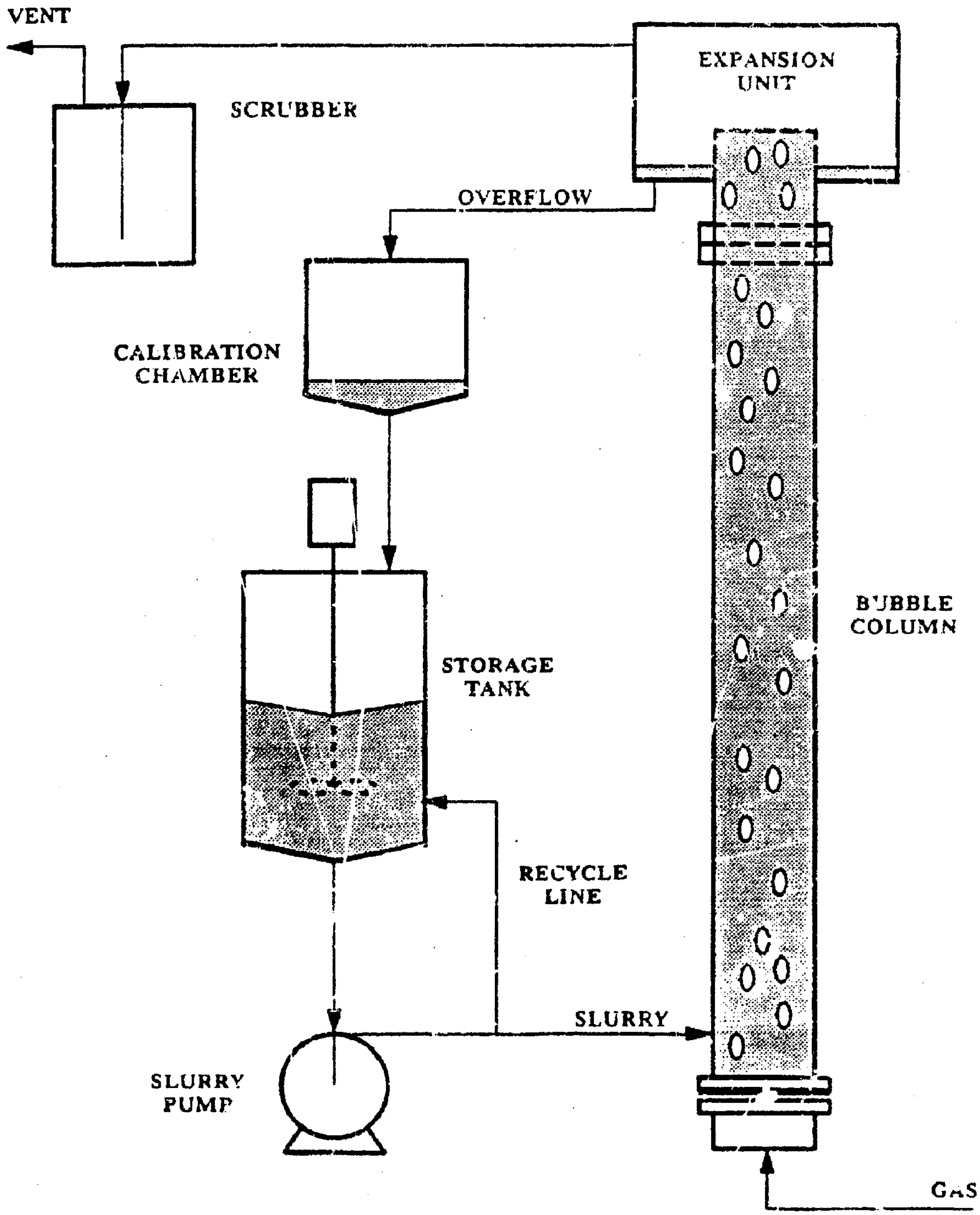

Figure 1. Schematic of the slurry bubble column apparatus.

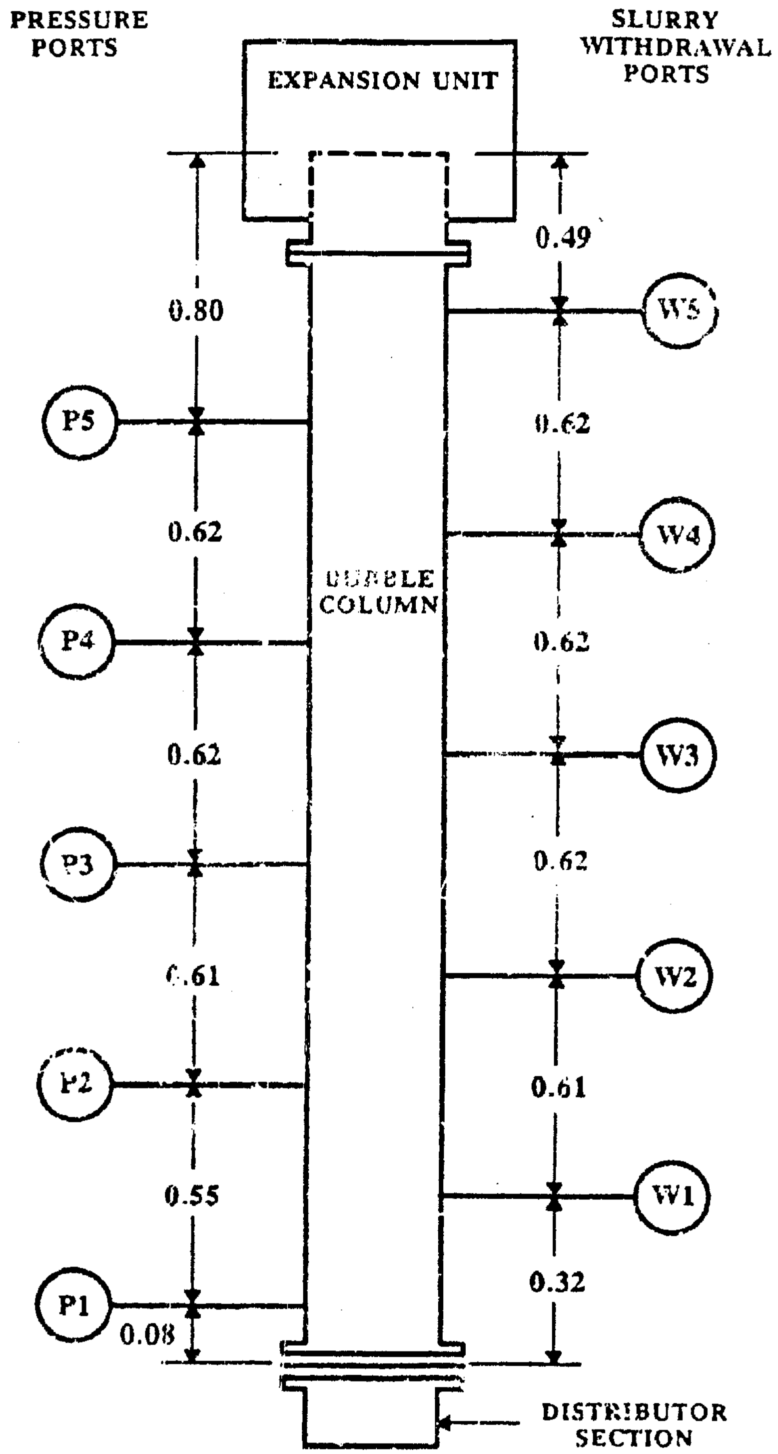

Figure 2. Schematic showing DP cc . and sampling port locations.

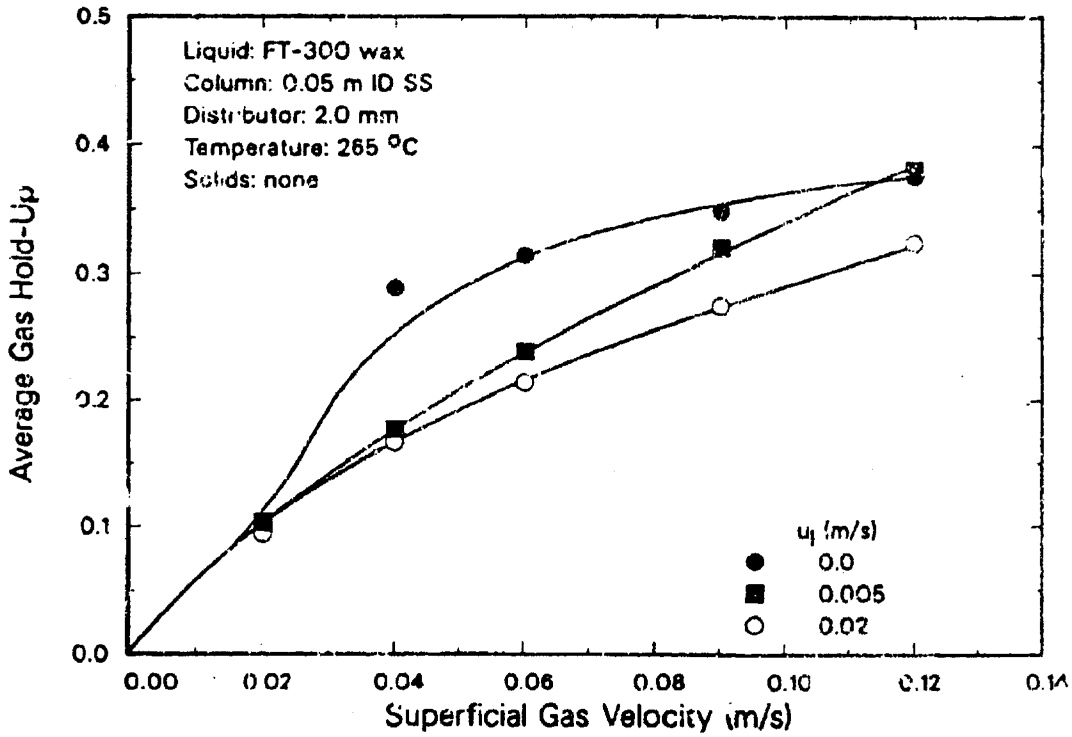

Figure 3. Effect of liquid circulation on average gas holdup in the absence of solids

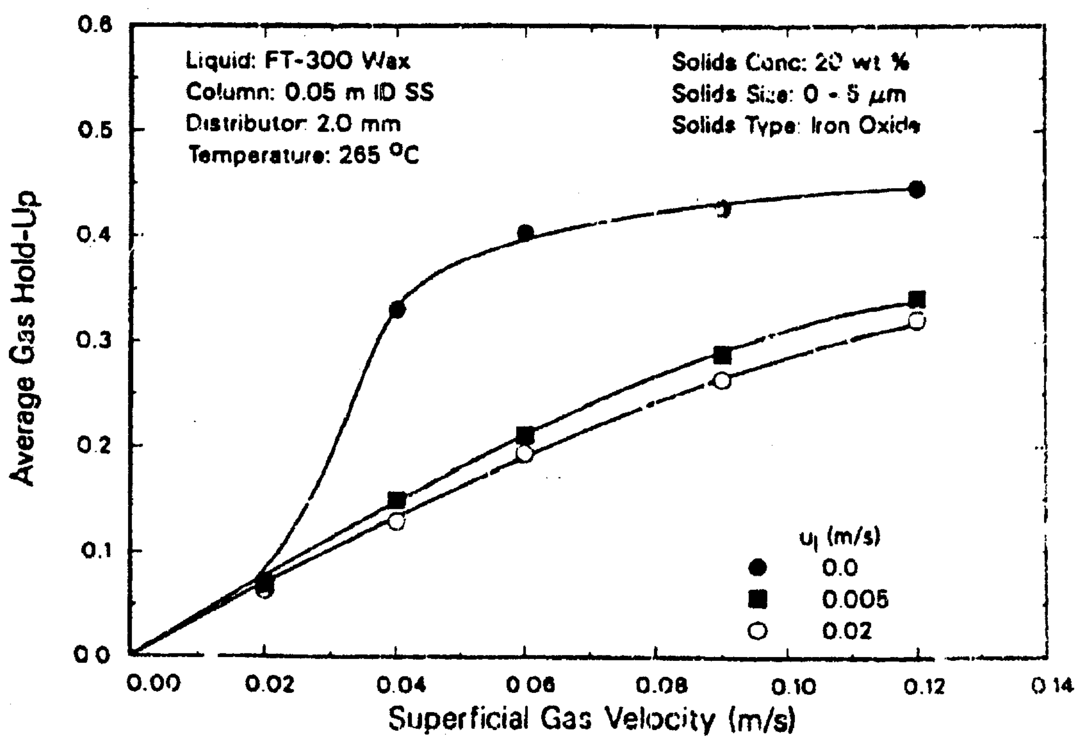

Figure 4. Effect of liquid circulation on average gas holdup in the presence of solids

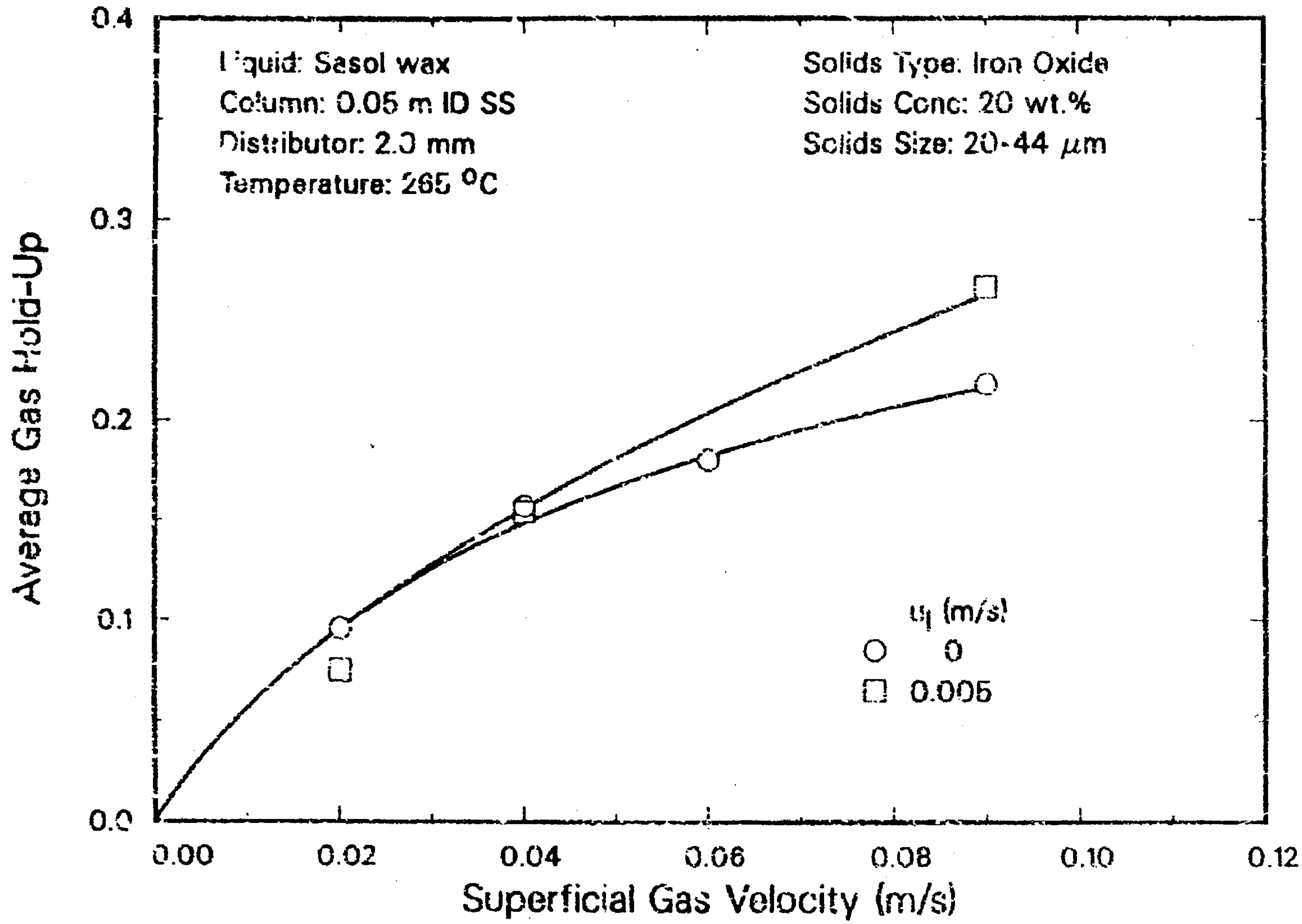

Figure 5. Effect of liquid circulation on average gas holdup for Sasol wax in the presence of solids.

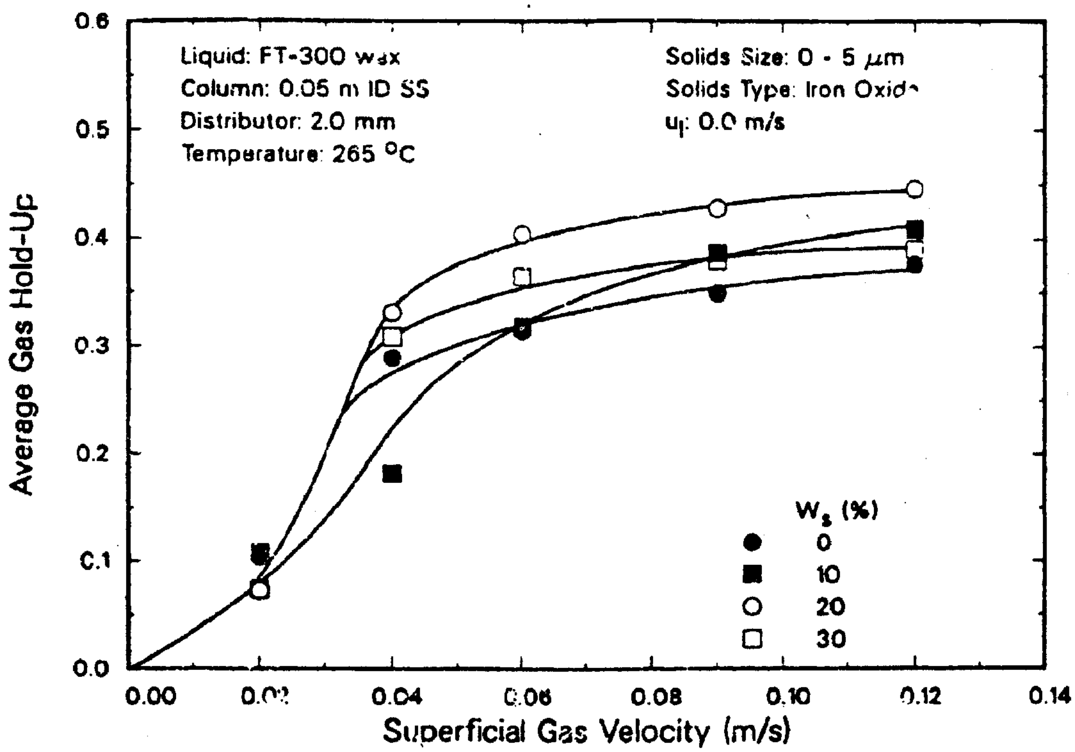

Figure 6. Effect of solids concentration on average gas holdup during batch mode of operation.

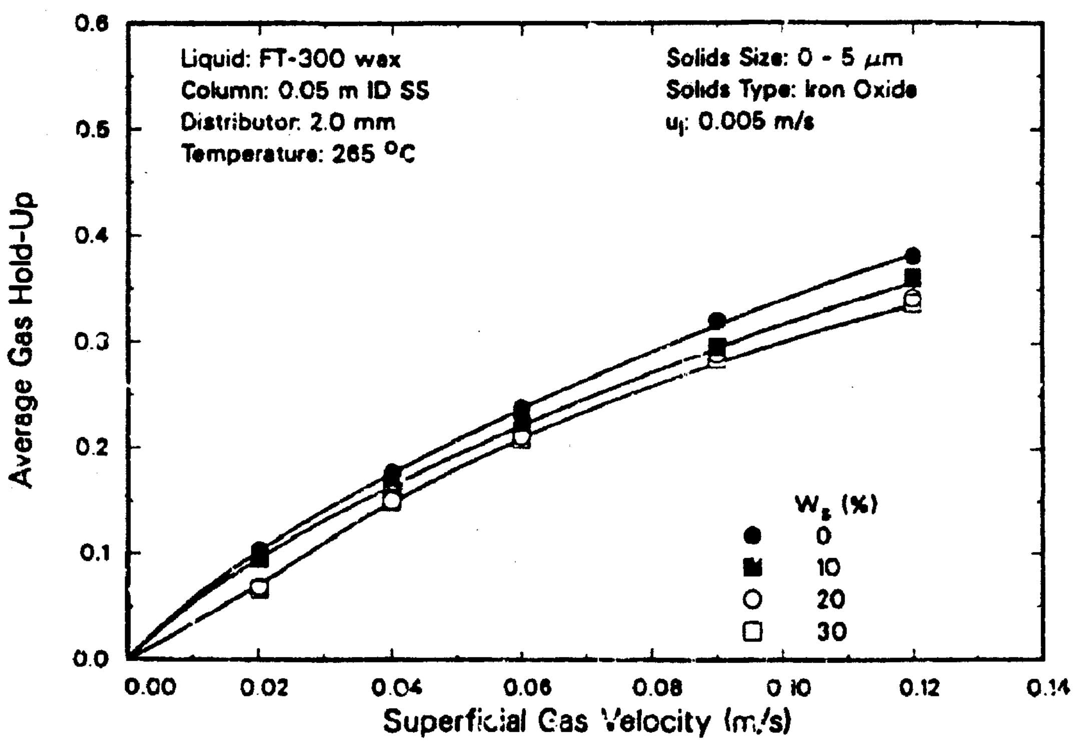

Figure 7. Effect of solids concentration on average gas holdup during continuous mode of operation.

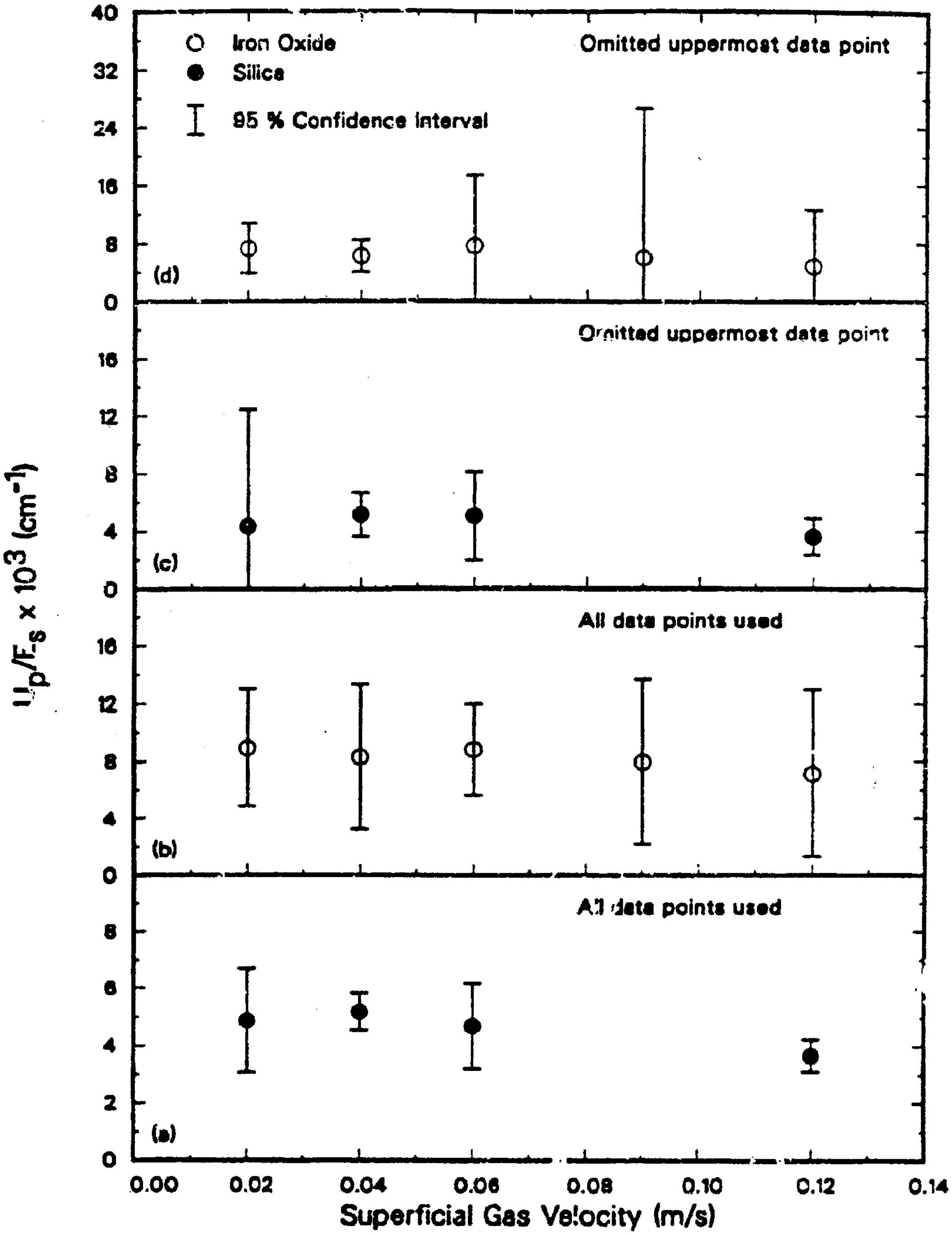

Figure 8. Effect of superficial gas velocity on U_p/E_s for iron oxide and silica (FT-300, 265°C, batch mode, 20 wt.% of 20–44 μm particles).

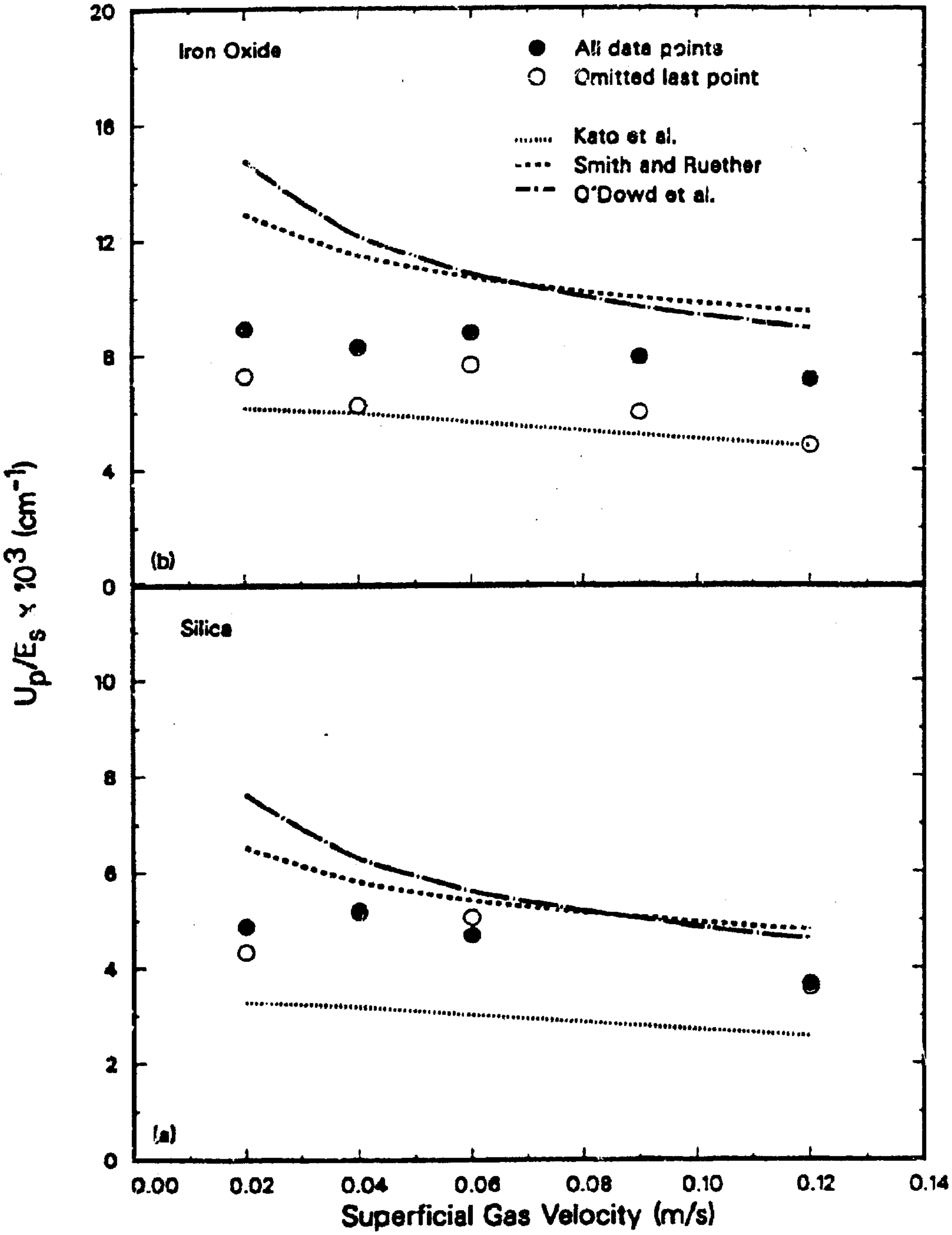

Figure 9. Comparison of U_p/E_s with literature for iron oxide and silica (FT-300, 265°C, batch mode, 20 wt.% of 20-44 μm particles).

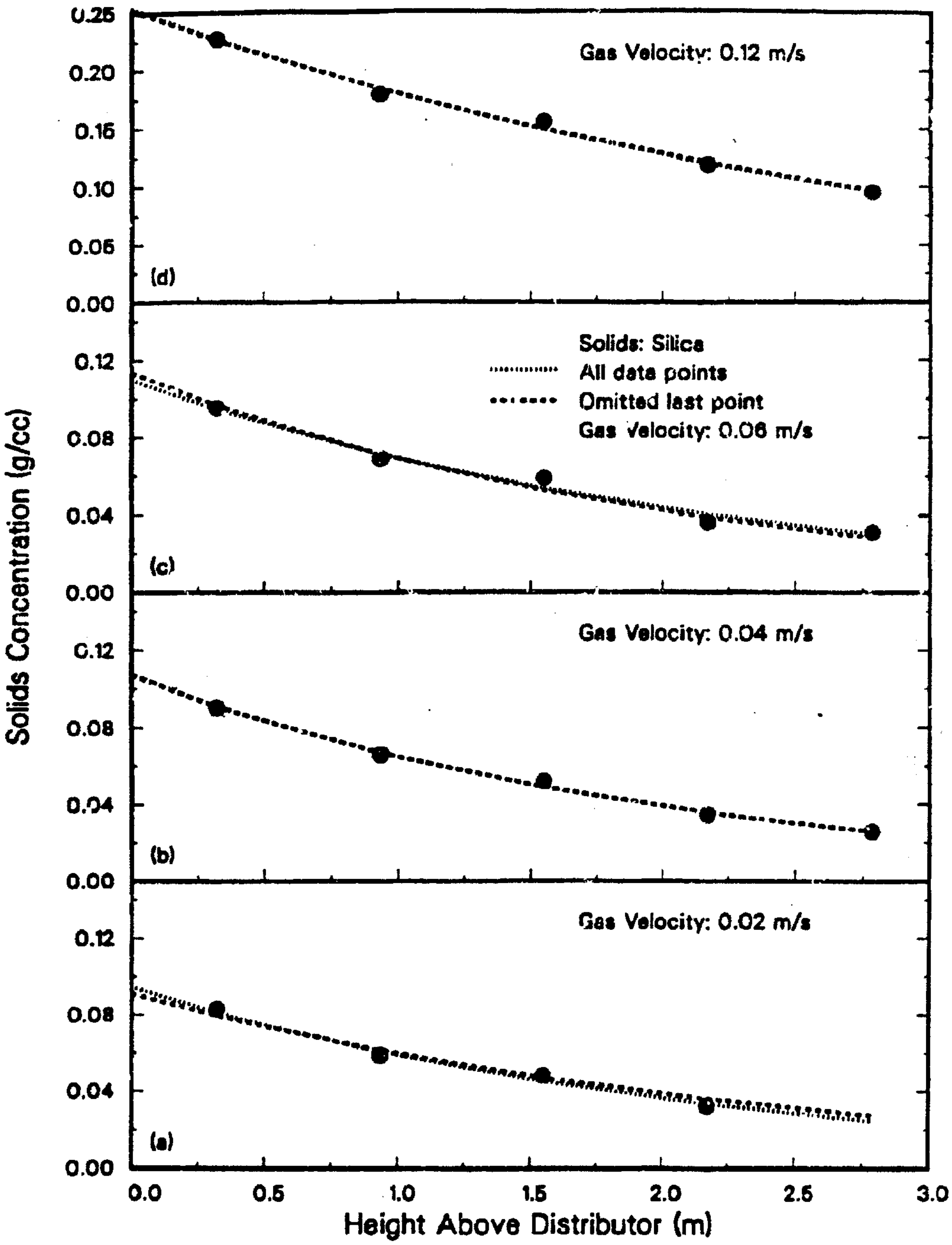

Figure 10. Comparison of measured axial solids concentration proficles for silica with values predicted by the semi-infinite dispersion model (FT-300, 265°C, batch mode, 20 wt.% of 20–44 μm particles).

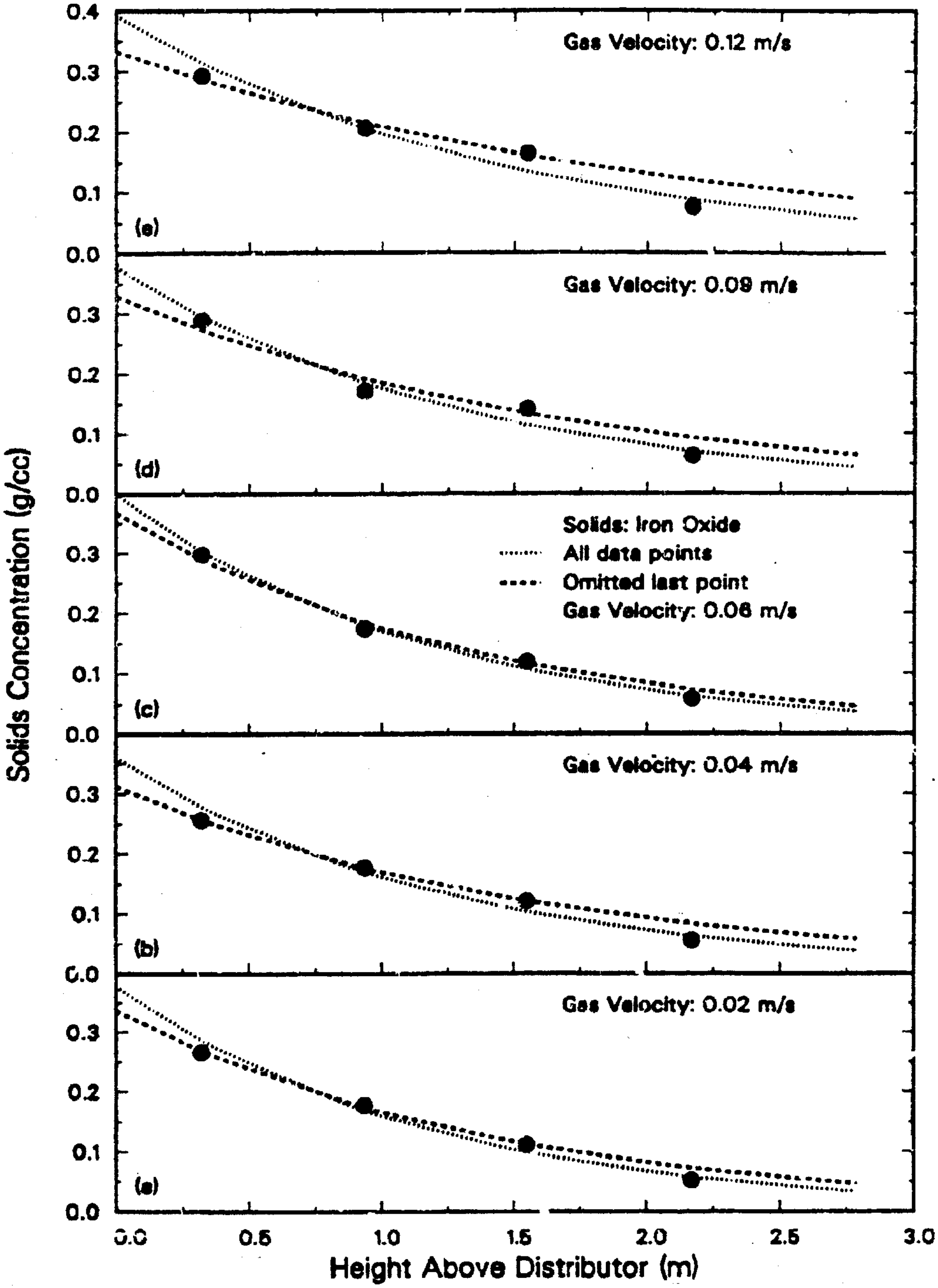

Figure 11. Comparison of measured axial solids concentration proficies for iron oxide with values predicted by the semi-infinite dispersion model (FT-300, 265°C, batch mode, 20 wt.% of 20–44 μm particles).

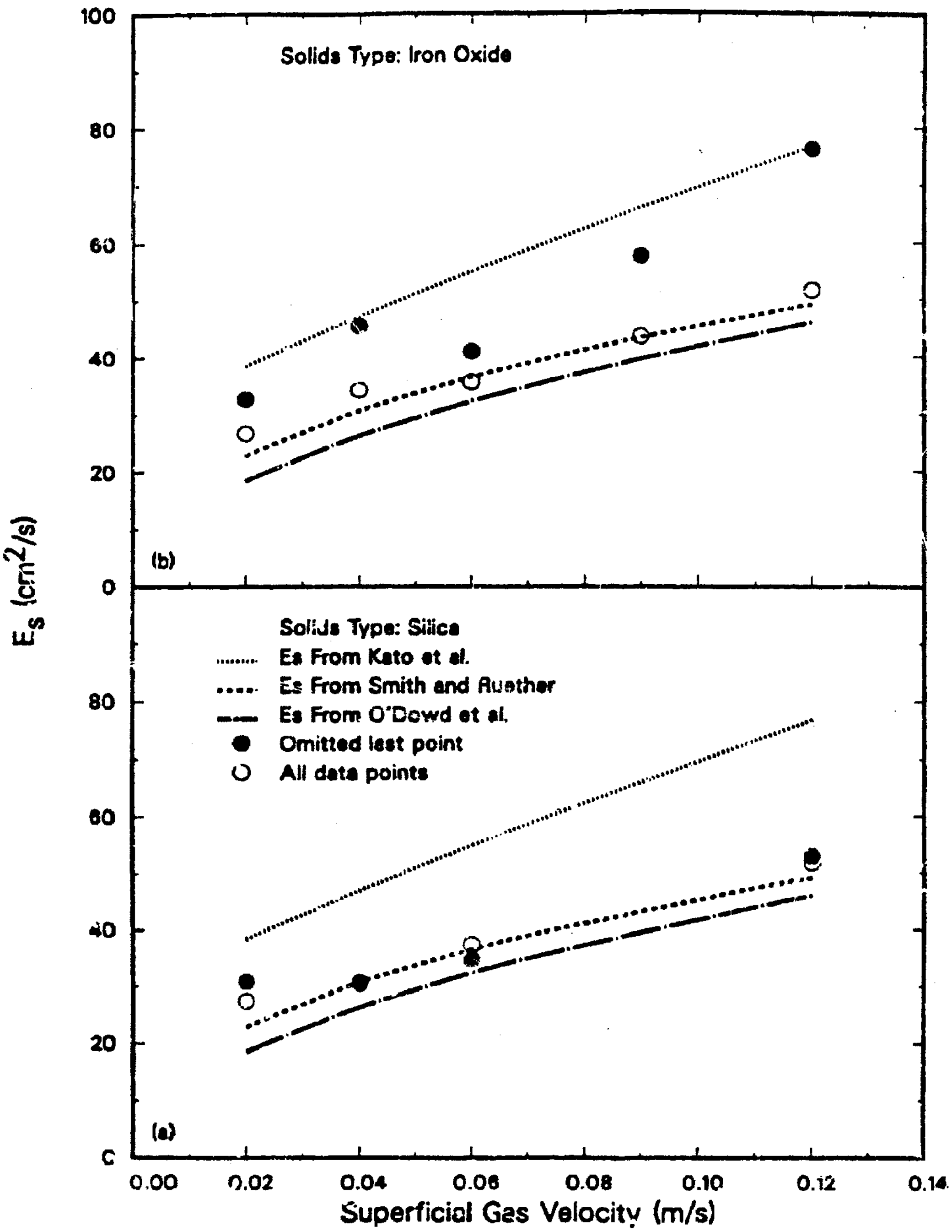

Figure 12. Effect of superficial gas velocity on axial solids dispersion coefficient using Kato et al.'s correlation for hindered settling velocity (FT-300, 265°C, batch mode, 20 wt.% of 20-44 μm particles).

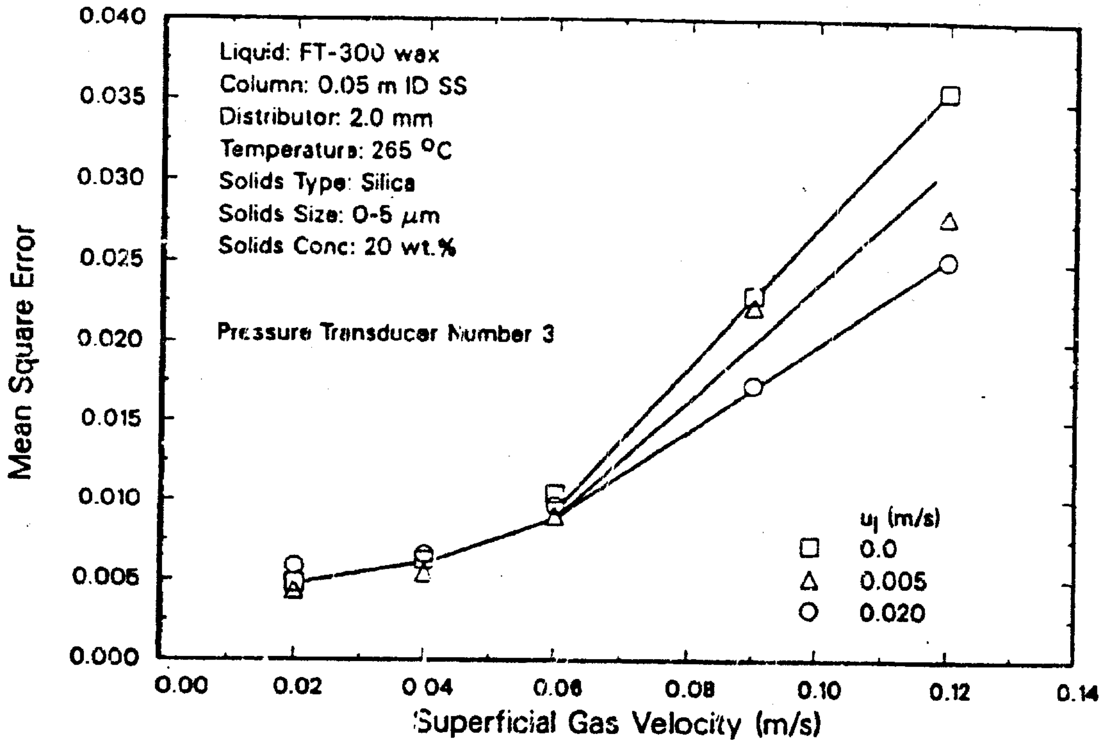

Figure 13 Effect of liquid circulation rate on the mean square error of pressure fluctuations at the wall.

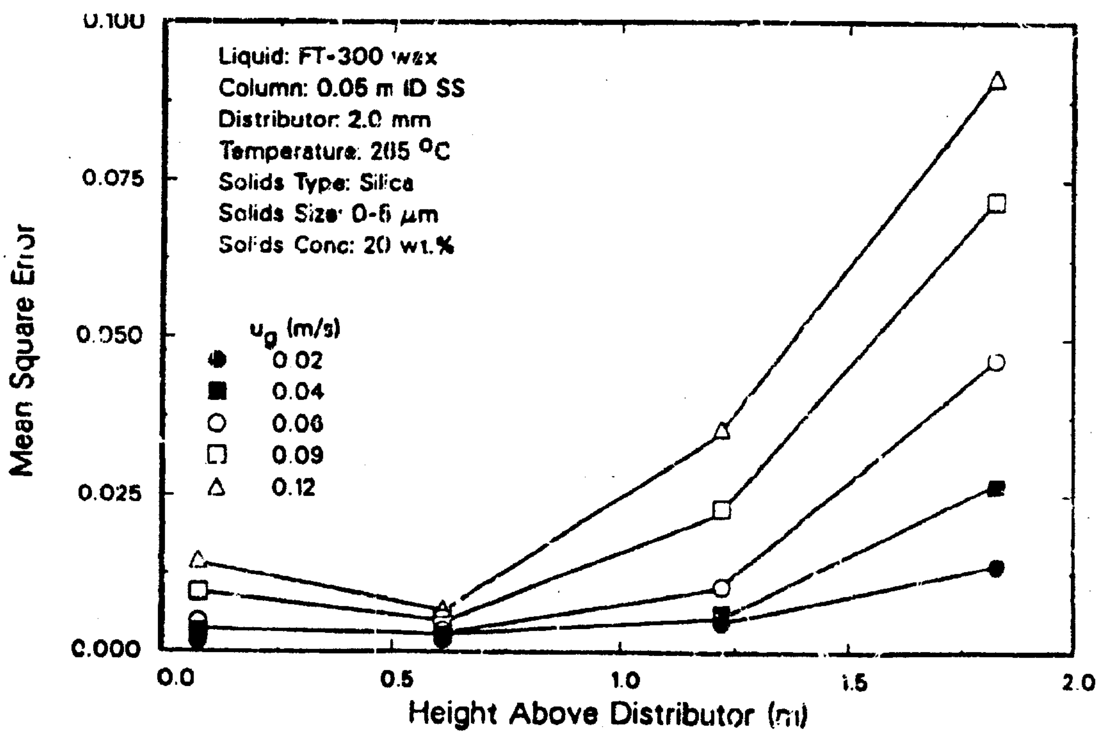

Figure 14 Effect of height above the distributor on the mean square error of pressure fluctuations at the wall

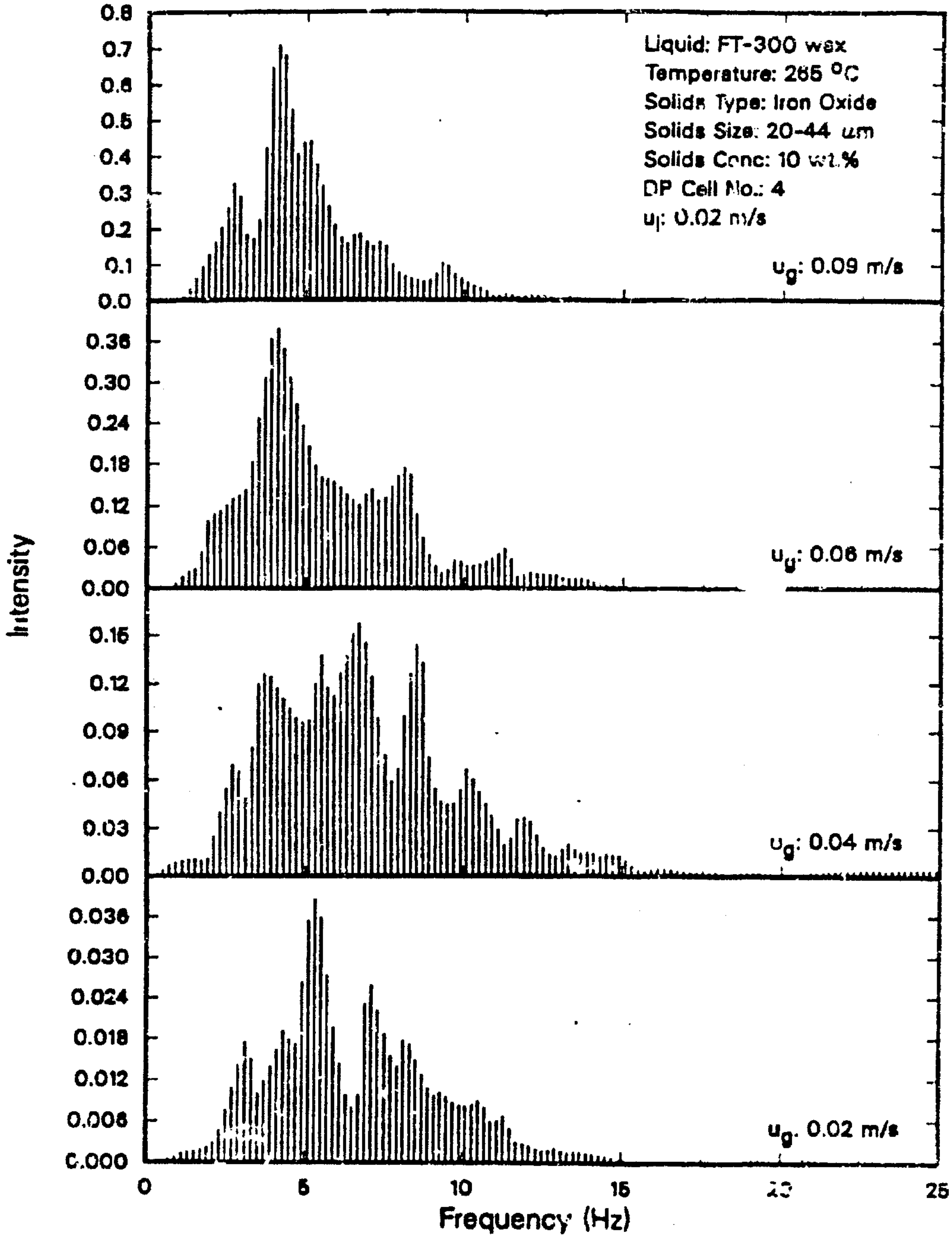

Figure 15. Effect of superficial gas velocity on the power spectral density function for pressure fluctuations at the wall.

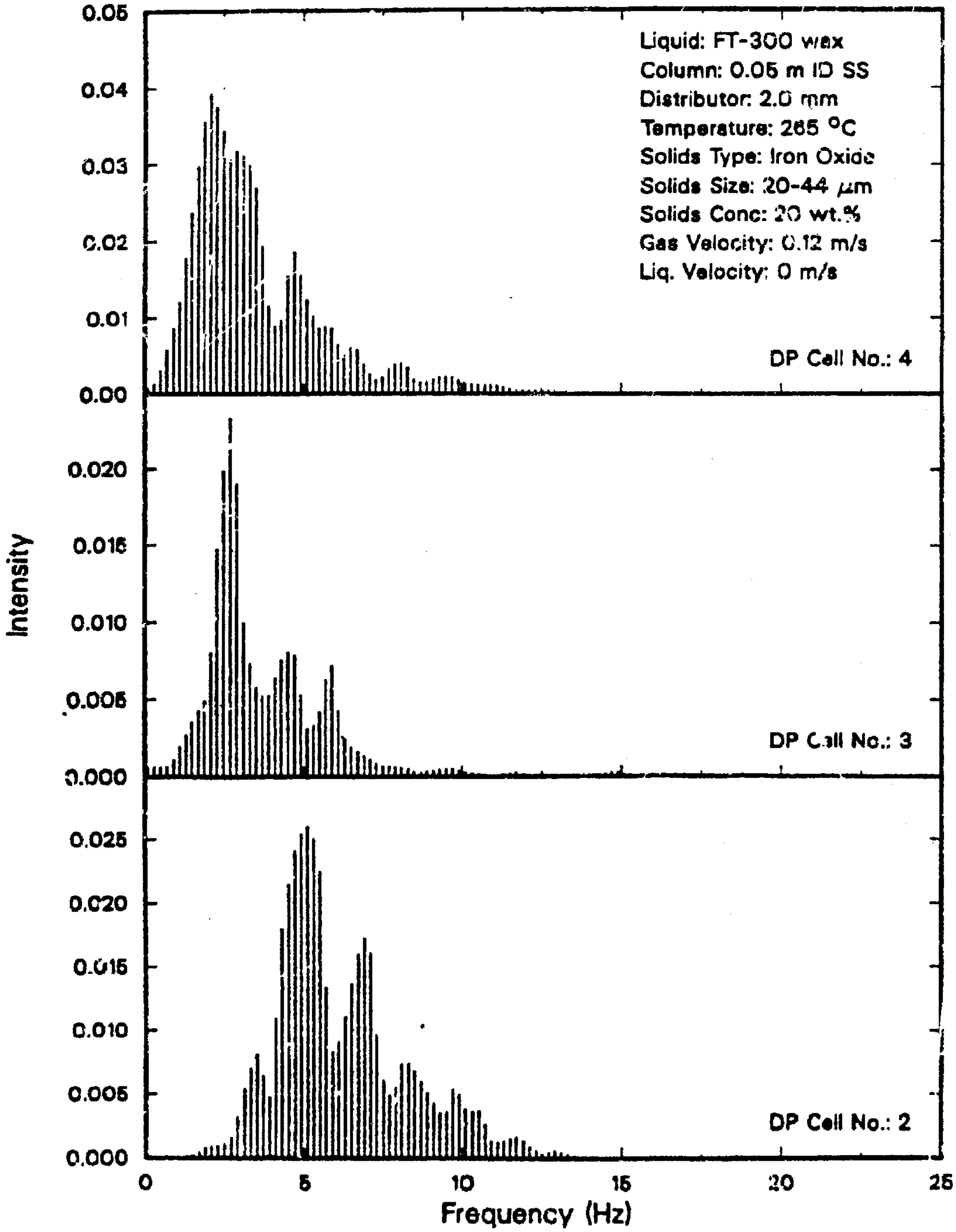

Figure 16. Effect of height above the distributor on the power spectral density for pressure fluctuations at the wall.

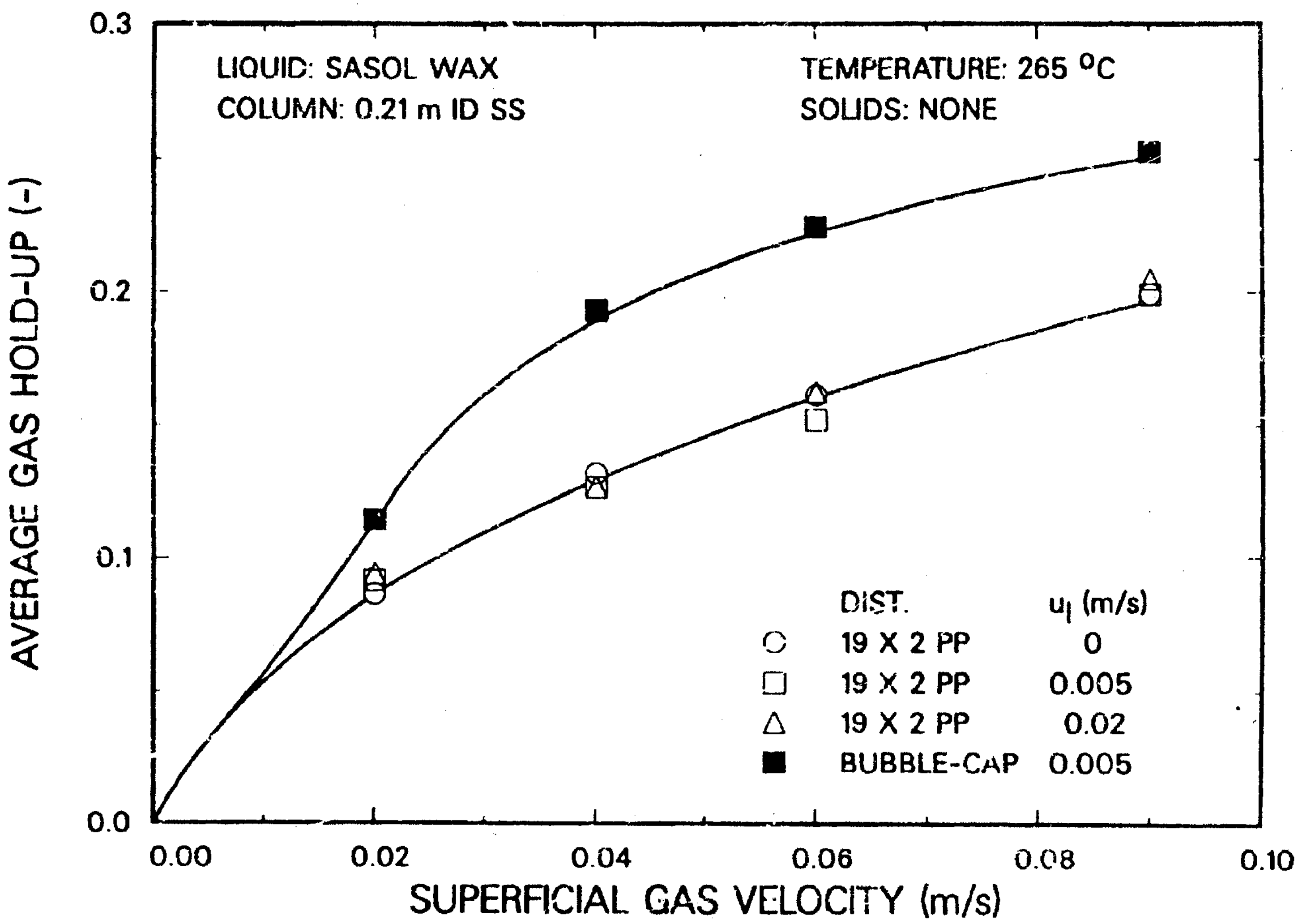

Figure 17. Effect of superficial gas velocity and distributor type on average gas holdup.

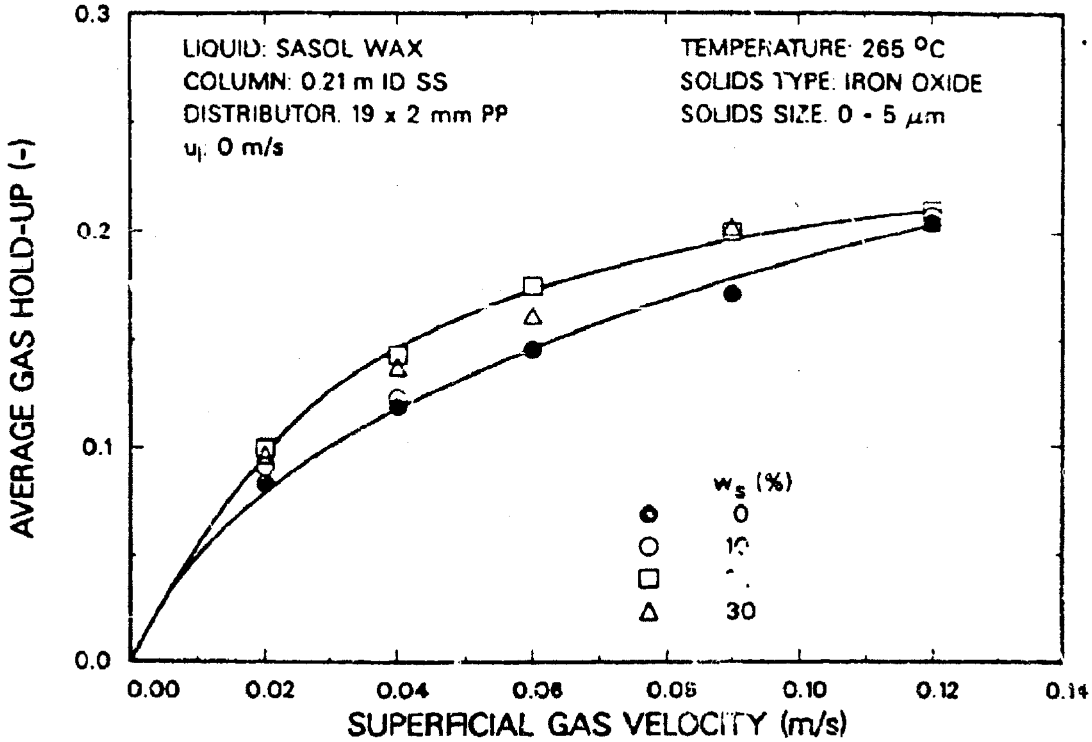

Figure 18. Effect of superficial gas velocity and solids concentration on average gas holdup (batch mode of operation).

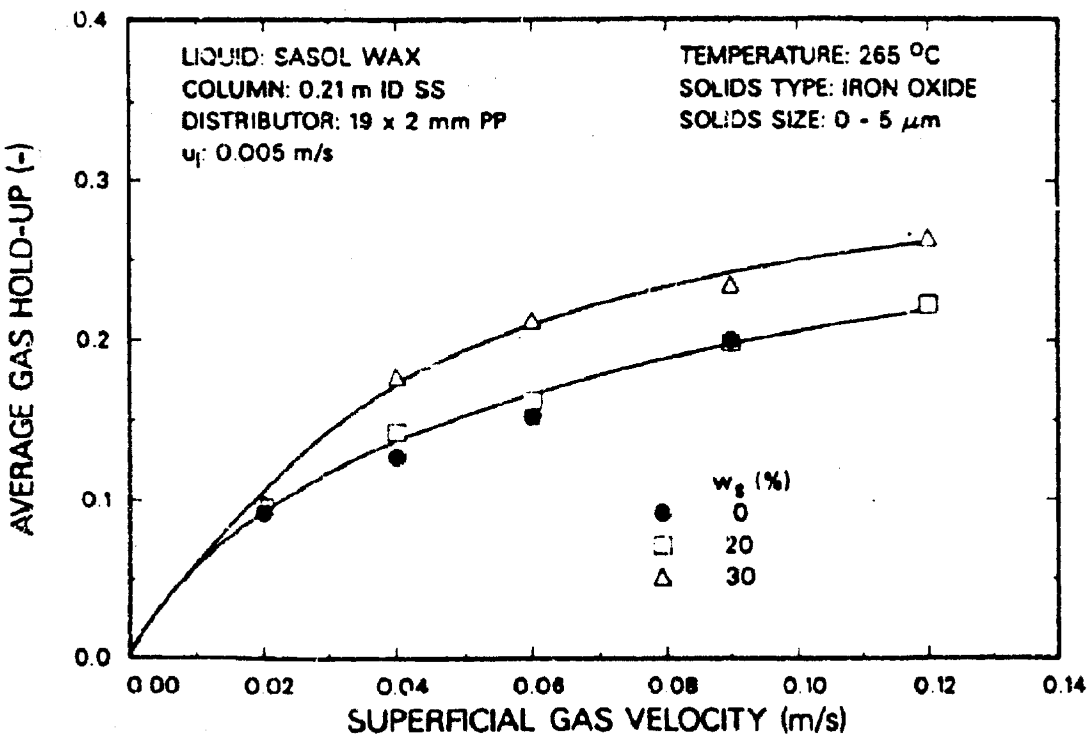

Figure 19. Effect of superficial gas velocity and solids concentration on average gas holdup (continuous mode of operation).

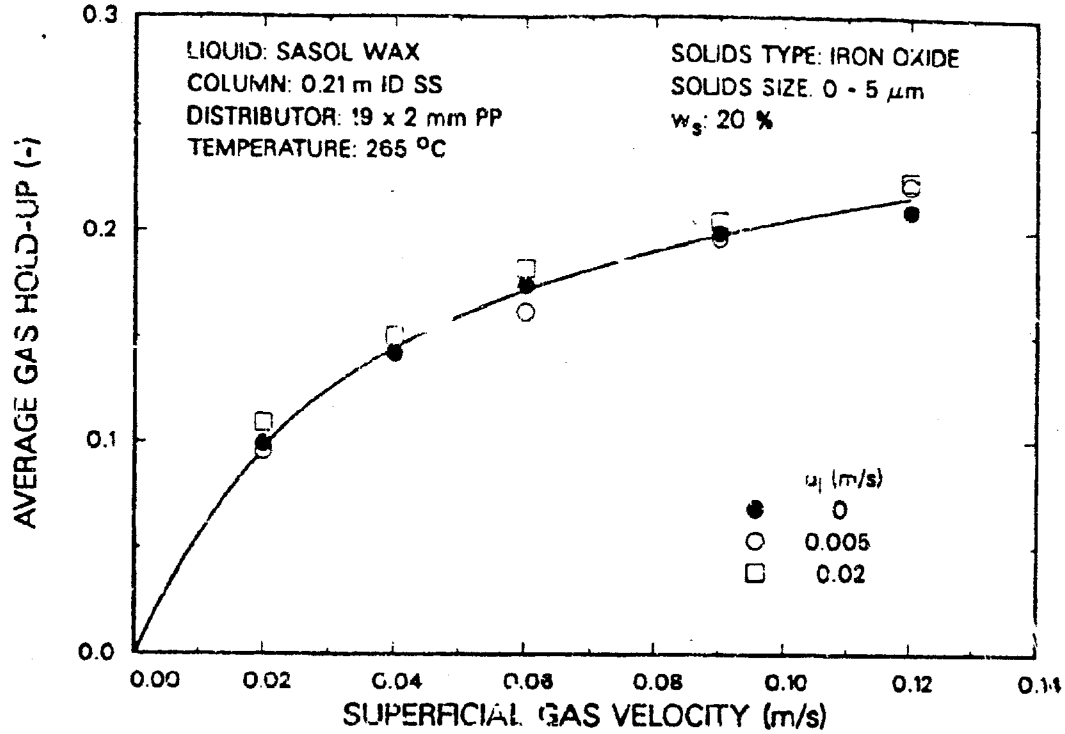

Figure 20 Effect of superficial gas velocity and liquid circulation on average gas holdup (20% solids present).

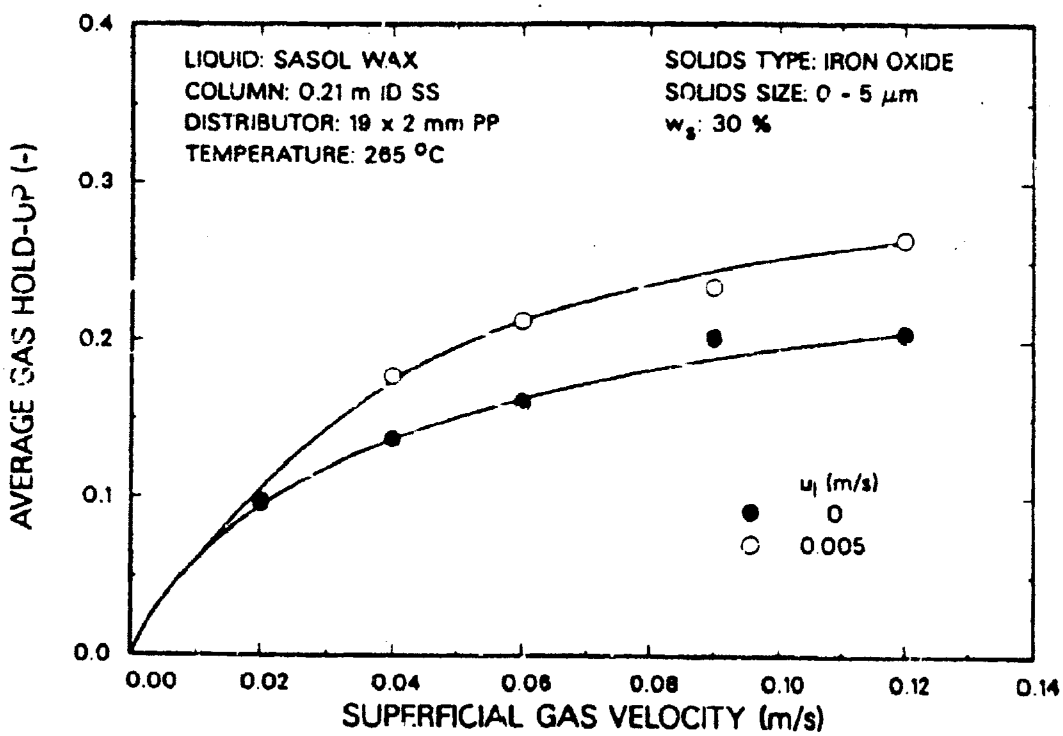

Figure 21 Effect of superficial gas velocity and liquid circulation on average gas holdup (30% solids present).

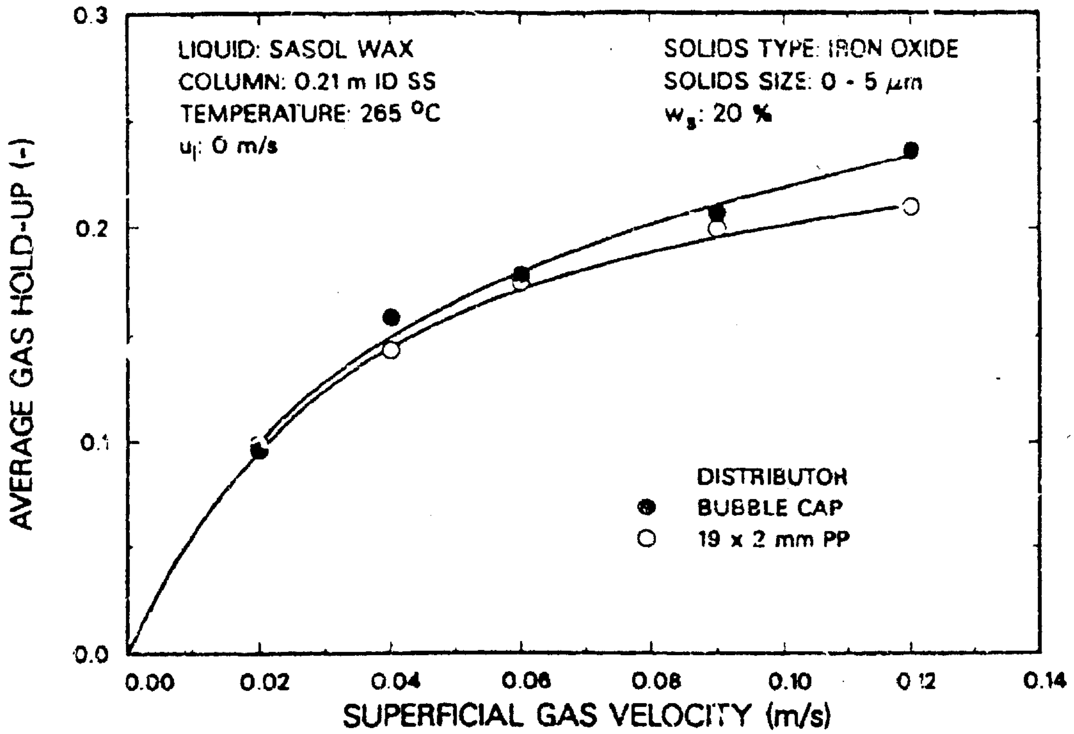

Figure 22. Effect of superficial gas velocity and distributor type on average gas holdup (batch mode).

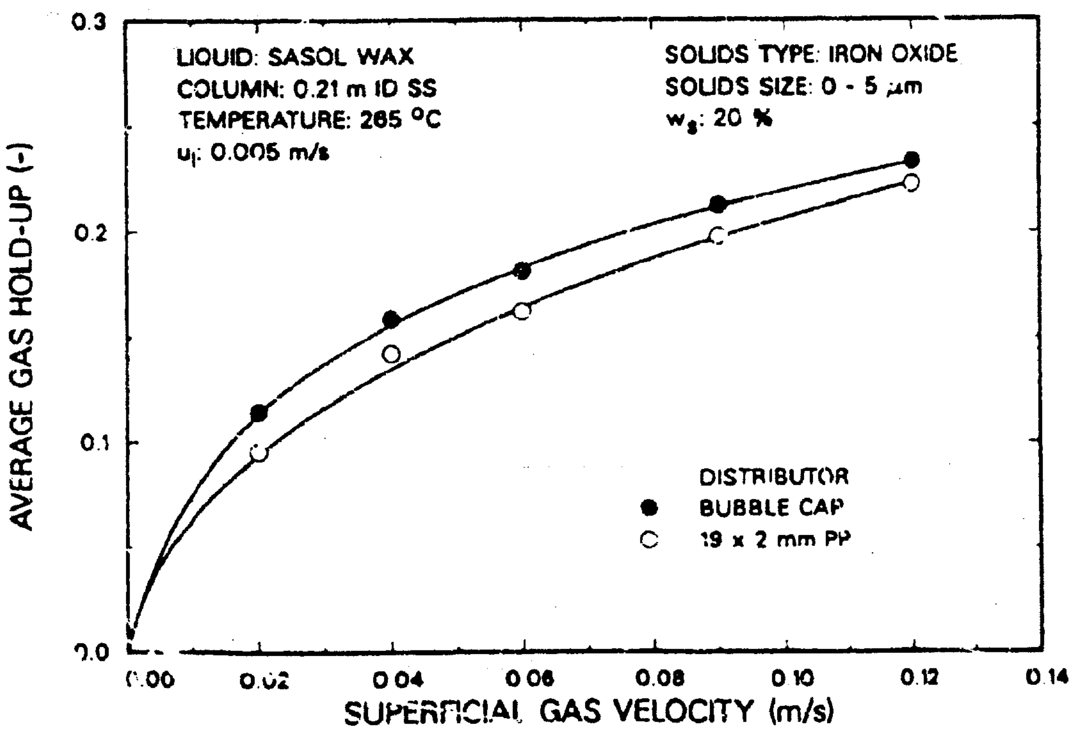

Figure 23. Effect of superficial gas velocity and distributor type on average gas holdup (continuous mode)

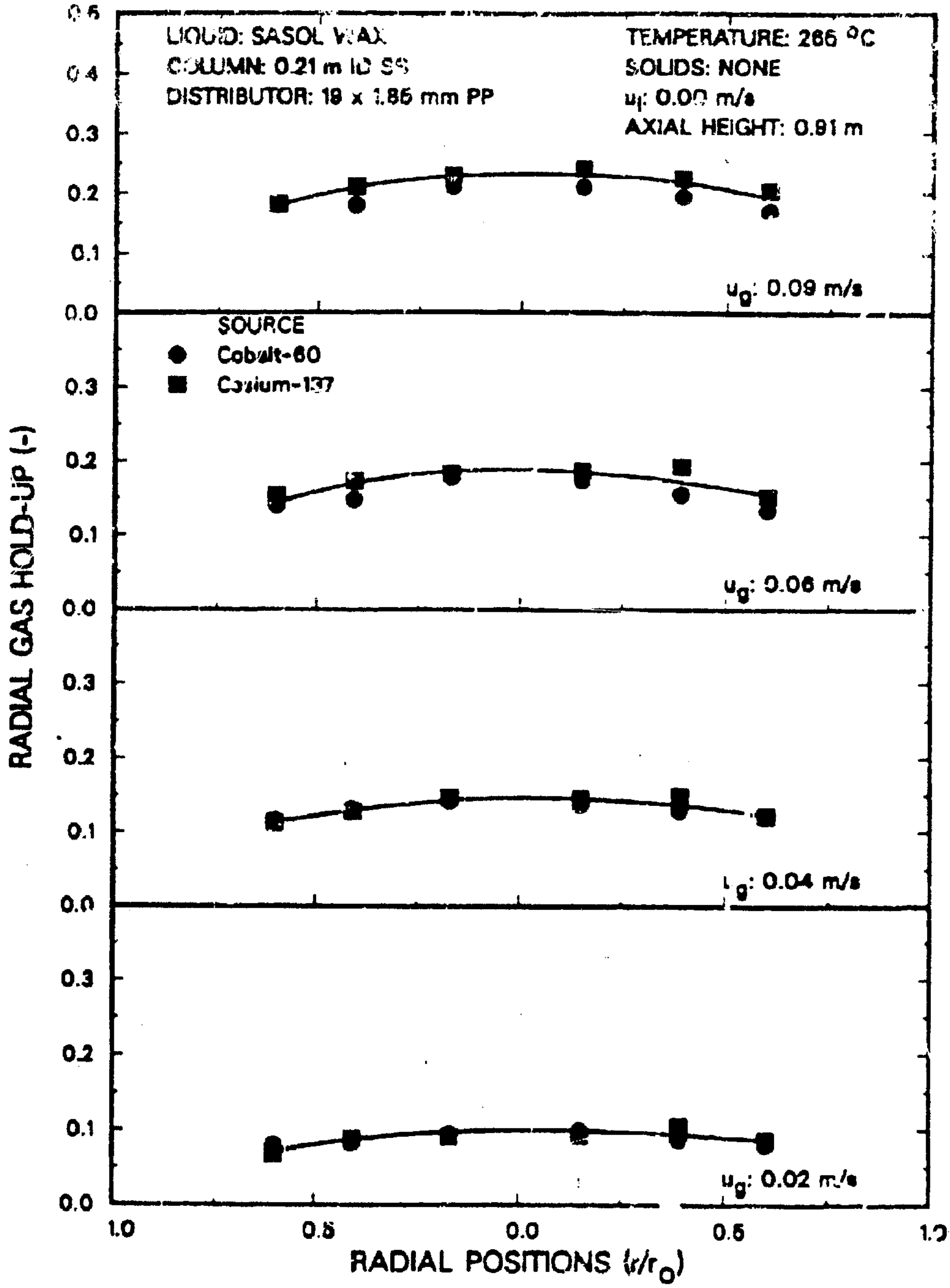

Figure 24. Effect of superficial gas velocity on radial gas holdup

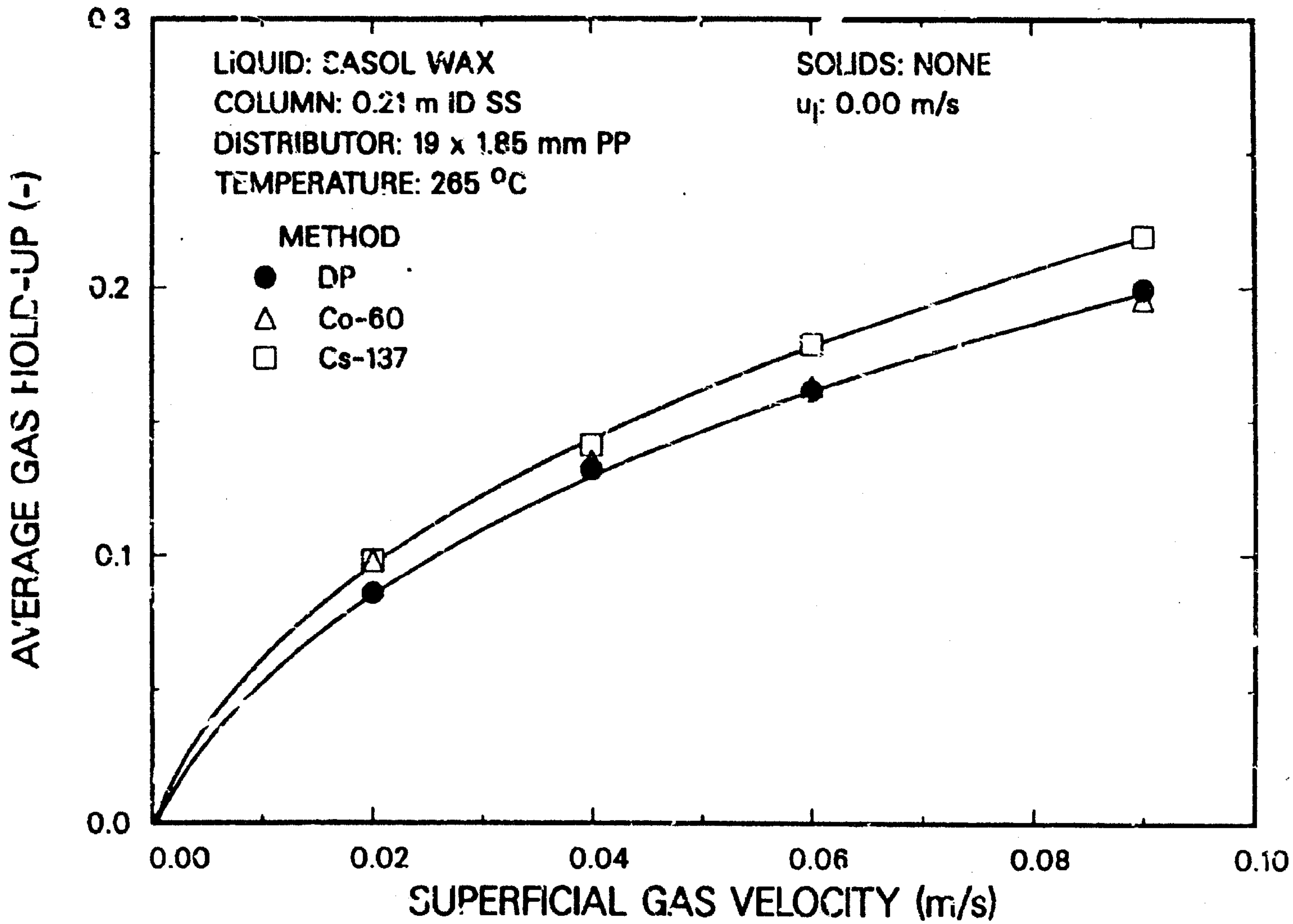

Figure 25. Comparison of average holdups from different techniques