

Abstract Submitted
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Power spectral density in mono-dispersed bubbly flows SANTOS MENDEZ, ROBERTO ZENIT, Universidad Nacional Autonoma de Mexico — An experimental study was carried out to determinate the power spectral density functions of mono-dispersed bubbly flows in a vertical channel using flying hot-film anemometry. To improve the phase discrimination technique, an optic fiber was attached to the hot-film sensor. In this manner, it was possible to clearly separate the erroneous signals caused by bubble collision with the sensor. A special array of capillaries was used to produce nearly mono-dispersed flow. Measurements were performed with gas fractions up to 6%. The power spectral density distributions were found to have a good qualitative agreement with those obtained by other authors. Depending on the values of the Reynolds number and gas volume fraction a progressive change from a $-5/3$ to -3 decay was observed.

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