MONTE - CARLO - CALCULATIONS FOR ULTRASOUND SCATTERING BY BLOOD

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The ultrasound scattering by blood depends on the flow velocity profile as can be shown by frequency analysis of the cw-Doppler-signals. Also the amplitude of the received Doppler signals fluctuates relatively strongly. A fact that can not completely be explained with the random distribution of single erythrocytes or with noise sources in the signal processing unit. These effects can be understood assuming erythrocyte aggregations in blood.

Using the Monte - Carlo - method we calculate differential scattering cross-sections of blood under the assumption of empirical distributions of aggregates. We will present auto-correlation functions for the ultrasound scattering by erythrocyte-aggregates, taking into account geometrical effects.