

## Performance Comparison of Two Multi-channel MCG System with Different Sensor Array

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We discuss the performance characteristics of the multichannel magnetocardiography (MCG) systems having different arrays of sensors. The multichannel system that many number of sensors are distributed on the as large area as possible is useful to more exact spatio-temporal analysis. However, if the number of sensor immoderately increases, the complexity and cost of fabrication and maintenance are increased in proportional to increase of number of sensors. Therefore, the number of sensors of the multichannel systems should be decided in consideration of the performance characteristics and practical aspect (the complexity and cost).

In this study, we have assumed two kinds of multichannel system, 36 and 61 channel, to evaluate the performance of the multichannel system as variation of the number of sensors and have investigated the performance by using three ways of computer simulations which were focused on the spatial resolution and localization accuracy. We could know that the 61 channel system was able to localize a deeper dipole source with reliable localization error in comparison with 36 channel system. in addition, the performance deterioration by increase of the noise was smaller in the 61 channel system than the 36 channel system.

Keywords: MCG, Optimal sensor arrangemet