

On Wireless Power Transfer

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Abstract— The paper is a general survey on power transfer by induction. The physical principle is pointed out and the constraints for an optimal operation applied both to the emitter and receiver are specified. Couple mode theory is used to study the wireless power transfer and a comparison with the circuit theory results is made. The analysis is focused on the power transfer efficiency in connection with the mutual inductance. An accurate method for mutual inductance computation is presented and the power transfer optimization is performed for different geometrical configurations which involve different mutual inductances.