

## General Relativity and Quantum Cosmology

# Spherical Symmetric Solution in $f(R)$ Model Around Charged Black Hole

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A static, asymptotically flat, spherically symmetric solutions is investigated in  $f(R)$  theories of gravity for a charged black hole. We have studied the weak field limit of  $f(R)$  gravity for the some  $f(R)$  model such as  $f(R) = R + \epsilon h(R)$ . In particular, we consider the case  $\lim_{R \rightarrow 0} \{h(R)/dh(R)/dR\} = 0$  and find the space time metric for  $f(R) = R + \mu^4/R$  and  $f(R) = R^{1-\epsilon}$  theories of gravity far away a charged mass point.

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