

Energy-neutral source-channel coding with battery and back-log size constraints

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Abstract:

When sensors measure the temporal evolution of a given phenomenon of interest and radio communication takes place over short distances, the energy spent for source acquisition and compression may be comparable with that used for transmission. Additionally, in order to avoid limited lifetime issues, sensors may be powered via energy harvesting and thus collect all the energy they need from the environment. This work addresses the problem of energy allocation over source acquisition/compression and transmission for energy-harvesting sensors.