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## Body Posture based Dynamic Link Power Control in Wearable Sensor Networks

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**Abstract:** This article explores on-body energy management mechanisms in the context of emerging wireless body area networks. In severely resource-constrained systems such as WBANs, energy can usually be traded for packet delay, loss, and system throughput, whenever applicable. Using experimental results from a prototype wearable sensor network, the article first characterizes the dynamic nature of on-body links with varying body postures. A literature review follows to examine the relevant transmission power control mechanisms for ensuring a balance between energy consumption and packet loss on links between body-mounted sensors. Specific emphasis is put on approaches that are customized for TPC via tracking of postural node mobility. Then the article develops a WBAN-specific dynamic power control mechanism that performs adaptive body posture inference for optimal power assignments. Finally, performance of the mechanism is experimentally evaluated and compared with a number of static and dynamic power assignment schemes.