Abstract Submitted
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Photocurrent Generation in Bent Nanostructures[1] YURIY PERSHIN, CARLO PIERMAROCCHI, Michigan State University — We study theoretically the effect of circularly-polarized electro-magnetic radiation on electrons confined in quantum rings and in bent ballistic quantum wires. The radiation couples to clockwise- or counterclockwise-propagating charge excitations in regions of the system with non-zero curvature, depending on the light polarization. This provides a transfer of the angular momentum from the radiation to the electrons. Response of the electron system to the external radiation displays a resonant behavior and can be measured through a current-induced magnetic field in quantum rings or using a standard current measurement technique in quantum wires.

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