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AC synthetic gauge potentials in ultracold atoms. BENJAMIN SMITH, LOGAN COOKE, TARAS HRUSHEVSKYI, LINDSAY LEBLANC, University of Alberta — We explore a periodically driven artificial gauge potential in an ultracold quantum gas, and the character of the resulting synthetic electric and magnetic fields. This is done by numerically simulating the Gross-Pitaevskii equation for a Raman-coupled F=1 system subject to a modulated two-photon detuning. We consider the effects of driving frequency and amplitude, interactions, and a spatial detuning gradient. This poster will also highlight some of our recent experimental progress and outlook.

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