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## Physical and nonphysical modes in the light front formulation for the LC gauge and the Lorentz gauge conditions

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The models with free vector fields are analyzed on the light-front (LF) hypersur-face. The massive vector model - Proca model - can be quantized unambiguously within the novel LF procedure, though it leads to singular terms in  $x^+$  coordinate. Also the modified models, where the Lorentz condition and the LC gauge conditions are explicitly induced by the Lagrange multipliers. Possible massless limits are studied for all cases and modes are classified as either physical or nonphysical.

### Biography

Elzbieta Dzimida-Chmielewska received her PhD in theoretical physic from University of Bialystok in 2014. She work at Faculty of Physic, University of Bialystok in Poland. She authored several papers on international journals. Her research now are focusing on the quantization of the QED.

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