

# LIGO's "GW150914 Signal" Reproduced Under YARK Theory of Gravity

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**Abstract.** We provide an alternative explanation of the widely publicized "GW150914 event" in the framework of Yarman-Arik-Kholmetskii (YARK) gravitation theory beyond the hypothesis about gravitational waves (GWs). According to YARK, the coalescence of super-massive bodies in a binary system would induce a related alteration of the respective wavelengths of the laser beams used in the LIGO Michelson-Morley interferometer, and our numerical results well match the GW150914 interference pattern without involving any GWs hypothesis. In addition, the binary merger necessitates a rest mass decrease in YARK (which we calculated to be about 3.1 solar masses) that should be released via electromagnetic radiation emission. Due to a finite (though tiny) rest mass of the photon in YARK theory, there should be a time lag between the arrival of gravitation perturbation and electromagnetic signal to Earth, which substantially depends on the particular value of the photon restmass, and lies in the range between few years and few hundred years. Thus, at the moment, YARK is the only alternative to GTR, which provides its own interpretation of the LIGO signals without involving the hypothesis about GWs.