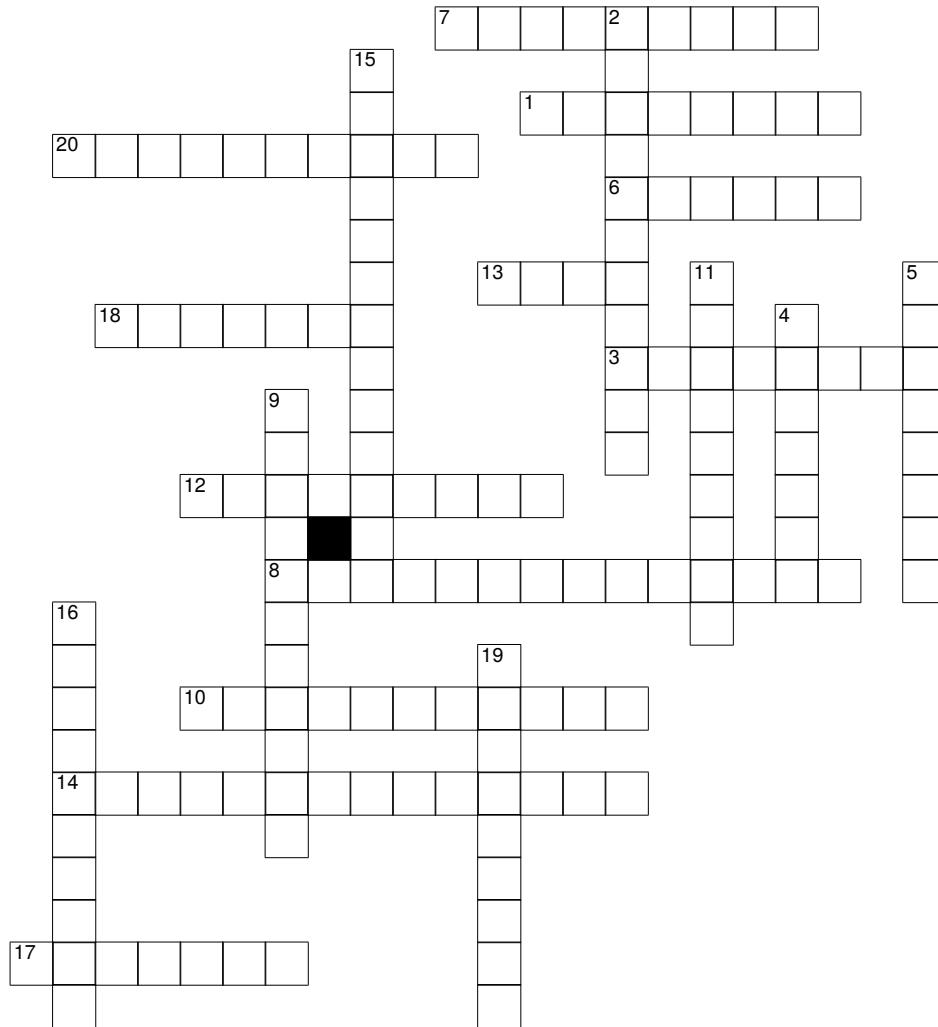


Crossword puzzle (a word bank will be shown at the end of my defense)

Name: _____



Across

- 1 “the existence of different viewpoints from which the system appears the same”
- 3 uniformity of a system in different directions
- 6 Soviet physicist who calculated acoustic radiation force on subwavelength spheres
- 7 German physicist after whom the operator $\nabla^2 + k^2$ is named, where k is the wavenumber
- 8 The density of an _____ medium does not vary time, precluding the existence of acoustic waves.
- 10 At high frequencies, wavefronts are _____, meaning they resemble plane waves.
- 12 This is the order of the wave variable at which radiation force is studied.
- 13 German-British physicist after whom the weak-scattering approximation is named; Oppenheimer’s advisor
- 14 Acoustic _____ is denoted by the Greek letter α and describes a scatterer at low frequencies.
- 17 A _____ medium does not supply external acoustic or electromagnetic energy.
- 18 The _____ number ℓ , sometimes referred to as the topological charge, describes the helicity of a vortex beam.
- 20 American physicist associated with the far-field surface integral for radiation force

Down

- 2 uniformity of a system at different positions
- 4 French physicist who studied the diffraction of light from circular apertures
- 5 British physicist who explained why the sky is blue
- 9 The _____ approximation, also called the low-frequency approximation, assumes that the acoustic wavelength is much larger than the length scale of interest.
- 11 _____ acoustics is an infinite-frequency approximation in which sound waves are modeled as rays.
- 15 _____ crystals generate an electric field when squeezed.
- 16 In a _____ medium, changing the position of the source and observer has no effect on the measured fields.
- 19 The symbol ∇_{\perp}^2 is the transverse _____, given in Cartesian coordinates by $\partial^2/\partial x^2 + \partial^2/\partial y^2$.