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Simulating the Hydrogen Molecule MONTANA MARQUEZ, JAMES ESPINOSA, Weatherford College — The chemical bond is presented in physics textbooks as a completely quantum phenomena, not explicable by classical physics. The applied mathematician Donald Greenspan showed that computational results reproducing the correct vibrational frequencies and bond lengths was possible if the assumption was made that two electrons in the molecule attracted each other. Using Visual Python, we will reproduce his work and show the time evolution of the molecule. A modified Ritz theory will be discussed that gives us the opportunity to develop an electron structure that will explain the electron attraction in this simple bond.

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