

In this talk, after a concise review on the basics of Entanglement Entropy in quantum mechanics, quantum field theory and also in Holography, I will present our recent work on some properties of the entangling surfaces by using the Holography. More precisely, I will try to answer to this question: For a given quantum field theory, provided the area of the entangling surface is fixed, what surface maximizes entanglement entropy? We will see that the answer is related to a mathematical problem, so called Willmore conjecture.