Magnetic field-tuned superconductor-insulator transition in amorphous $Nb_xSi_{1-x}$ HERVE AUBIN, ALEXANDRE POURRET, KAMRAN BEHNIA, JEROME LESUEUR, CNRS-ESPCI; 10 rue Vauquelin, Paris, France, CLAIRE MARRACHE-KIKUCHI, LAURENT BERGE, LOUIS DUMOULIN, CSNSM-IN2P3, Orsay, France — New results from a study of amorphous superconducting $Nb_xSi_{1-x}$ thin films will be presented. This system is observed to undergo a superconductor-metal-insulator transition with variations of : Nb concentration, film thickness or magnetic field. On the superconducting compound with $x=0.15$, the superconducting transition temperature is observed to increase with the film thickness $d$, ($T_c=550mK$ for $d=1000Å$; $T_c=250mK$ for $d=125Å$), and, for each sample, a magnetic-field tuned superconductor-insulator transition is observed. The field tuned transition is characterized by an isobestic point $(B_c,R_c)$ in the magnetic field variation of the magnetoresistance, plotted for various temperatures, that indicate the quantum critical nature of this superconductor-insulator transition and the absence of an intermediate metallic state. We carefully followed the temperature dependance of this critical point $(B_c,R_c)$ and show that the critical field value $(B_c)$ goes down to zero at a temperature scale $(1K)$ well above $T_c$ for every sample studied. This analysis allows us to identify a large region in the diagram $(H,T)$ where exists superconducting fluctuations.