Ceramic capacitors are of interest for the storage of small amounts of energy.

Film capacitors are increasingly used, they achieve better performance but are more expensive.

New types of dielectric are contemplated, as well as a deposit thickness reduction, which could offer better returns but must then solve problems of electric fields.

The principle of supercapacitors is close to that of capacitors but the dielectric film is replaced by an ion-conducting electrolyte. Supercapacitors are typically placed in series unlike capacitors. This series connection may carry a risk of imbalance but this rarely occurs. The benefits of supercapacitors is obtaining better energy density but with a constant upper discharge time.

Substantial progress is observed in the areas of electrical engineering and electronics. But only the field of storage of electrical energy, has changed little. The capacitor to the advantage of being stable and have a long lifetime, it can also provide considerable powers. But its storage capacity is very low. For supercapacitors, greater progress is expected with a storage capacity and significant overload.

HOW TO ESTIMATE A PV PLANT PRODUCTION

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With the fossile energy decrease, renewable energy are more and more used just like Photovoltaic (PV). Nowadays, photovoltaic energy is growing fast. As real power plant struture or as small structure for private individual. Every PV plant is composed by the same things that they are big or small. Each P vis coposed by a PV generator witch provide a current, a voltage and an electrical power (IDC,VDC,PDC) coming from panels. This parameters are varying du to the environement (Sunshining,tilt and temperature, infrastrutures). The static converters, witch are the essential elements of the PV production line allow on one hand to extract by using algorithms (MPPT) the maximal power and on the other hand to transform DC into AC to be able to reinject it on the network or to use it directly according to applications. It remains however difficult today to know the performances in real conditions throughout the life expectancy of the power plant PV. To estimate and analyze performances of an installation PV, numerous Studies use a method named "Méthode de l'indice de performance IEC61724". Several models, based on this method, take counts various indicators. At the end a ratio is calculated (the sun's energy supposly received divided by the reference

energy). If the istalation is good then the ratio is about 0.6 to 0.8. The reference energy is based on the average sunshine received by the PV panel. To canculated the reference energy u can use sensor (witch is very expensive) or a estimation based on the global horizontal sunshine. Several model of global horizontal sunshine exist. But you can't affirm that the model you'll choose is the best one for you're study. You can use different model to decrease the error of only one model. To be more accurate, we are going to do a comparativ study with the data from our building ADREAM.

ESTIMATION OF VOLTAGE STABILITY

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Consequently to several recent disturbances, voltage stability has become a major concern for Transmission System Operators. But those disturbances are difficultly predictable because of the many variables which can cause those disturbances.

The voltage stability is the way that a system can maintain a normal voltage after a disturbance. There is a lot phenomenon who can cause disturbances, if there is dysfunction on the transport line or on a generator, If the load change, or if the parameters of the system change.

The present article treats only of the disturbances cause by a change of load.

If the load change is because the electrical need increases or decrease. When the electrical need increases the current increase as well and the voltage decrease because of the resistance of the line. The disturbances also depend of the reactive power which is absorb by the load.

To solve those problems, we often use capacitor, generator, or Flexible

Alternating Current Transmission System (FACTS). The biggest problem is that we cannot predict the variation of the electrical need. That why we use several techniques to estimate the voltage stability. The Continuous Power Flow technique

(CPF) or the Saddle Node Bifurcation (SNB). This two technique estimate the global voltage stability of a system Usually, the voltage stability of a steady state power system corresponds to the maximal active power demand increase that can be supported by the system. As this global criterion does not allow an efficient localization of control actions, we propose a local voltage stability index. That why we combine the CPF with a local estimate system (ILST).