# Resum de Tesi Doctoral

UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH
Escola de Doctorat

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| Títol de la tesi | Estrategias de control para sistemas de generación distribuida durante huecos de tensión |
| Unitat estructural | Enginyeria Electrònica |
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(Mínim 1 i màxim 4, podeu veure els codis a http://doctorat.upc.edu/gestio-academica/impresos/tesi-matricula-i-diposit/codis-unesco)

Resum de la tesi de 4000 caràcters màxim (si supera els 4000 es tallarà automàticament)

The objective of this thesis is the development of control strategies for distributed generation systems during voltage sags. The proposed control strategies present different options to improve the behavior of inverters during voltage unbalances and grid faults. Therefore, it could be possible to contribute to ride-through the perturbation and to avoid the disconnection of power suppliers during these contingencies.
The scope of the proposed strategies covers a wide range of possibilities, from static voltage unbalance to dynamic voltage sags. The control algorithms are versatile and their usefulness is discussed in detail. The utility of these algorithms is focused on distributed generation in power networks with high penetration of renewables energy sources, mainly wind farms, located in remote zones and connected in weak grids.
The proposed control strategies are
(i). Voltage support control of the maximum and minimum phase voltages within the limits for continuous operation.
(ii). Control of positive and negative active and reactive powers to flexibilize the low-voltage ridethrough services, by injecting the maximum current of the inverter.
(iii). On the use of effective power factor for reducing the voltage unbalance in static grid voltage perturbations.

Lloc: Vilanova i la Geltrú

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Signatura