Modelarea regimurilor tranzitorii ale UPS-ului ajuta la determinarea componentelor cheie din cadrul unei topologii ce pot fi dimensionate corespunzator pentru a imbunatati calitatea curentului si a tensiunii la iesire. Aceasta lucrare trateaza raspunsul tranzitoriu al UPS-ului in situatia in care tensiunea de alimentare dispare din maximul unei semialternante si atunci cand sarcina isi dubleaza consumul de current din valoarea de varf a acesteia. Pe de alta parte este tratata si situatia in care aceleasi scenarii mentionate mai sus se intampla la trecerea prin zero a tensiunii. Mai mult de atat, cercetarea arata diferite aplicatii unde fiecare structura poate fi folosita, pentru a avea rezultate optime, asigurand in acelasi timp si o analiza a celor mai populare tipuri de UPS. Sunt explicate metodele de simulare si masurare iar la sfarsit sunt prezentate concluziile.

UPS transient response modeling shows areas where the overall structure of the topology can be modified with the purpose of improvement given output electric characteristics. This paper focuses on the large amplitude transient response of the UPS in scenarios where the mains voltage disappears at it’s peak value and when the load increase it’s current consumption at the outputs voltage peak value. Furthermore the small amplitude transient response is shown where the mains voltage disappears near zero crossing and when the load increase it’s current consumption at the outputs voltage zero crossing. In addition, research shows potential applications where each structure can give optimal performance while providing analysis on the most popular UPS topologies. Method and simulations are explained and conclusions are presented.