

Using time maps approach we have studied numerous kinds of boundary-value problems. Some open questions related to our results are stated at the end of some preceding chapters.

Here, we would like to present some research directions where time maps can be used. First, we recall that time maps were used (in the world) in different situations. Concerning the differential operator, they were used for the Laplacian ( $u \mapsto u''$ ), for the  $p$ -Laplacian operators ( $u \mapsto (\varphi_p(u'))' = (|u'|^{p-2} u')'$ ) and for generalized  $p$ -Laplacian operators. Concerning the boundary conditions, they were used for Dirichlet conditions and for some others boundary data involving a parameter. Concerning the nonlinearities (second members in the equation) they were used for numerous classes. Also, let us point out some contemporary users of time maps through the world. Professor S.-H. Wang in Taiwan whose works are mainly based on the Laplacian operator. He used, in several articles, the Smoller-Wasserman's technique. The Chile school (R. Manasevich, M. Garcia Huidobro and P. Ubilla) is mainly concerned by generalized  $p$ -Laplacian operators. This school have some contributions with the Italian Professor F. Zanolin.

In U.S.A., we mention Professor A. Castro (Texas) and R. Shivaji (Mississippi). In joint works with V. Anuradha, Professor Shivaji studied some boundary-value problems with Laplacian operator ( $u \mapsto u''$ ) and boundary conditions involving a parameter. In Algeria, we have used time maps when the differential operator is the  $p$ -Laplacian with Dirichlet boundary conditions. Having in mind this time maps world picture we can ask several open questions; take each known result (proved by time maps), where the differential operator is the Laplacian ( $u \mapsto u''$ ), extend it to the  $p$ -Laplacian operator, and then to the generalized ones. An other direction of open questions is to extend each one of our results to generalized  $p$ -Laplacian operators. Also, we can combine with the boundary conditions; for example improve each one of our results to the case where the boundary conditions are those concerned by V. Anuradha and R. Shivaji. All other combinations can be considered to give rise to a large amount of open questions. I believe that the list of open questions I refer to above, provide works for several years to many mathematicians.