Perspectives

In forthcoming works, the results obtained in this thesis can be extended at least in the following directions:

Chapter 2:

1− Take the second member f in the space $L^p(\Omega)$, where $p \in]1, \infty[$.

2− The study of the generalized Burgers equation

$$\partial_t u + g(u)\partial_x u + \partial_x^2 u = f.$$

3− Passage to dimension two in space (the problem becomes a system).

Chapter 3:

1− Consider the case $\varphi_1(T) = \varphi_2(T)$

2− The function f on the right-hand side of the equation of Problem (**??**), may be chosen more regular.

Chapter 4:

1− Take an initial condition different from zero and/or non-homogeneous boundary conditions.

2− Consider another boundary conditions.

3− The study of KdV problem can be extend to the case $\varphi_1(0) = \varphi_2(0)$ or $\varphi_1(T) = \varphi_2(T)$. This domain is non regular and can not be transformed into a regular domain without the appearance of some degenerate terms in the equation.