AARJMD VOLUME 1 ISSUE 32 (APRIL 2015) ISSN : 2319 - 2801

A Peer Reviewed International Journal of Asian Academic Research Associates

AARJMD

ASIAN ACADEMIC RESEARCH JOURNAL OF MULTIDISCIPLINARY

CONTROLLABILITY OF A QUASI-LINEAR HEAT EQUATION

MULAMBULA ANDANJE [1]; JOHN WANYONYI MATUYA[2]

[1]Masinde Muliro University of Science and Technology, P.o Box 190-50100, Kakamega (Kenya)

[2]Maasai Mara University, P.o Box 861-20500, Narok (Kenya)

Abstract

In this article we have examined the controllability of the quasi-linear heat equation. We considered distributed controls with support in a small sub-domain. We assumed that the quasi-linear terms are locally Lipschitz. We have proved that there exists a control that drives to desired state within a finite time. Our main objective was to determine the existence, uniquiness and regularity of solutions of controllability of a quasi-linear heat equation.

Key words: Controllability, Lipschitz, quasi-linear, Hilbert space