

# A solution to the Benjamin–Bona–Mahony equation

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## Abstract

In this paper, I describe a solution to the Benjamin–Bona–Mahony equation.  
The paper ends with "The End"

## Introduction

The Benjamin–Bona–Mahony equation<sup>[1]</sup> is

$$\frac{\partial}{\partial t}u(x, t) + \frac{\partial}{\partial x}u(x, t) + u(x, t)\frac{\partial}{\partial x}u(x, t) - \frac{\partial}{\partial t}\frac{\partial}{\partial x}\frac{\partial}{\partial x}u(x, t) = 0$$

In this paper, I describe a solution to the Benjamin–Bona–Mahony equation.

## A solution to the Benjamin–Bona–Mahony equation

A solution to the Benjamin–Bona–Mahony equation is

$$u(x, t) = 4ab - \frac{b}{a} - 1 - 12ab \operatorname{sech}^2(ax + bt + c)$$

where

$a, b, c$  are constants of integration

## References

[1] [https://en.wikipedia.org/wiki/Benjamin-Bona-Mahony\\_equation](https://en.wikipedia.org/wiki/Benjamin-Bona-Mahony_equation)

## The End