Collected papers of

Lord Soumadeep Ghosh

Volume 17

My proposal for the social upliftment of minorities in India

Soumadeep Ghosh

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Abstract

In this paper, I describe my proposal for the social upliftment of minorities in India. The paper ends with "The End"

Introduction

It's a well-known international fact that India has just been through a rough and traumatic patch, at least politically and socially. In view of the recent events, I present my proposal for the social upliftment of minorities in India.

My proposal for the social upliftment of minorities in India

My proposal for the social upliftment of minorities in India is to credit INR 500/- per month to every individual in India who lives below the poverty line (as defined by the United Nations).

Increasing the money supply, if needed, for the proposal

I recommend increasing the money supply, if needed, for achieving the objectives of the proposal.

The End

General Biology

Soumadeep Ghosh

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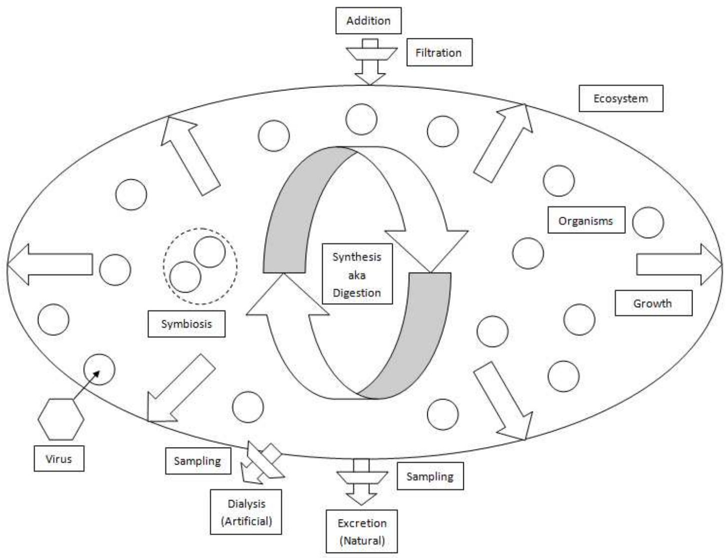
Abstract

In this paper, I describe General Biology. The paper ends with "The End"

Introduction

In light of the COVID-19 crisis, knowledge has been demanded of me of General Biology. In this paper, for the benefit of all economies, I describe General Biology.

General Biology



1. General Biology is the study of an **ecosystem** with **organisms** inside the ecosystem.
2. Every organism has specific learning and function in the ecosystem.
3. There exists **addition** to the ecosystem. Addition is either **nutritious** (good for the health of the organisms inside the ecosystem) or **poisonous** (develops immunity in small doses but causes death of organisms in large doses). There exists **filtration** that removes poisons whose lethal dose is small.
4. There exists **synthesis** (also known as **digestion**) in the ecosystem that **processes** the addition and **releases** nutrients to the organisms in the ecosystem.
5. There exists **growth** of the ecosystem and the organisms inside the ecosystem.
6. There exists **repair** of the ecosystem and the organisms inside the ecosystem.
7. There exists natural **excretion** of **waste** with sampling from the ecosystem.
8. There exists artificial **dialysis** of **waste** with sampling from the ecosystem.
9. There exists **symbiosis** (living together) of two organisms for mutual benefit.
10. Every organism in the ecosystem is also an ecosystem.
11. There exist viruses that inject **malicious code** into organisms that reach too near the **borders** of the ecosystem.

Fighting viruses

Viruses can be fought against by two methods:

1. Disable the capability of the virus to inject malicious code.
2. Destroy the virus by destroying the cell wall of the virus.

The End

Non-standard learning paradigms

Soumadeep Ghosh

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Abstract

In this paper, I describe non-standard learning paradigms.
The paper ends with "The End"

Introduction

In a previous paper, I've described scenario learning which uses methods from both supervised and unsupervised learning and is superior to machine learning.

But there exist non-standard learning paradigms that are riskier (and hence more rewarding) than scenario learning.

In this paper, I describe non-standard learning paradigms.

Non-standard learning paradigms

1. **Meta learning**

   Meta learning is defined as learning from learners and/or learning systems.

2. **Beta learning**

   Beta learning is defined as learning from the CAPM beta coefficients of financial data.

3. **Vedic learning**

   Vedic learning is defined as learning from the Vedas.

4. **Brahmanic learning**

   Brahmanic learning is defined as learning from the brahmins.

5. **Kayastaic learning**

   Kayasthaic learning is defined as learning from the kayastas.

6. **Reinforcement learning**

   Reinforcement learning is defined as learning from the effects of the actions of the kayastas.

The End

Ghosh's stop-loss constant

Soumadeep Ghosh

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Abstract

In this paper, I describe Ghosh's stop-loss constant. The paper ends with "The End"

Introduction

Trading losses can be limited by any individual with knowledge of Ghosh's stop-loss constant. In this paper, I describe Ghosh's stop-loss constant.

Ghosh's stop-loss constant

Ghosh's stop-loss constant is given by the root x to the equation

$$\exp(-x) = \frac{1}{\left((x+1)^{1/x} - 1\right)^{1/x}}$$

which is 0.482152 to 7 significant figures.

The End

Silane

Soumadeep Ghosh

Kolkata, India

Abstract

In this paper, I describe silane. The paper ends with "The End"

Introduction

Silane (SiH_4) is a colourless, pyrophoric, toxic gas with a sharp, repulsive smell.

Production of silane

1. Reaction of magnesium silicide with hydrogen chloride

$$Mg_2Si + 4HCl \rightarrow 2MgCl_2 + SiH_4$$

2. Reaction of silicon with hydrogen chloride

$$Si + 3HCl \rightarrow HSiCl_3 + H_2$$

3. Reaction of silicon with hydrogen chloride

$$Si + 3HCl \rightarrow HSiCl_3 + H_2$$

$$4HSiCl3 \rightarrow SiH_4 + 3SiCl_4$$

(in presence of metal halide catalyst)

Uses of silane

Silane is a precursor to elemental silicon, which is used to prepare water repellents which enables masonry, silicone which enables production of artificial rubber and, semiconductor devices which enable modern computing. Silane also finds uses in chemical warfare.

The End

A particular 5-parameter solution to the 1-dimensional heat equation

Soumadeep Ghosh

Kolkata, India

Abstract

In this paper, I describe a particular 5-parameter solution to the 1-dimensional heat equation. The paper ends with "The End"

Introduction

The 1-dimensional heat equation is given by

$$\frac{\partial u(x,t)}{\partial t} = \frac{\partial^2 u(x,t)}{\partial x^2}$$

A particular 5-parameter solution to the 1-dimensional heat equation

A particular 5-parameter solution to the 1-dimensional heat equation is given by

$$u(x,t) = \frac{1}{1032}(1440at^2 + 1440atx^2 + 1032atx - 876at + 120ax^4 + 172ax^3 - 438ax^2 - 559ax + 1440bt^2 +$$

1440 b t x$^2 - 1032btx - 876bt + 120bx^4 - 172bx^3 - 438bx^2 + 559bx + 864ct^2 + 864ctx^2 - 1032ctx + 300ct + 72cx^4 - 172cx^3 + 150cx^2 - 473cx - 4608dt^2 - 4608dtx^2 + 1152dt - 384dx^4 + 576dx^2 + 1032d + 864et^2 + 864etx^2 + 1032etx + 300et + 72ex^4 + 172ex^3 + 150ex^2 + 473ex)$

where

$$u(-\frac{1}{2}, -\frac{1}{2}) = a$$

$$u(\frac{1}{2}, -\frac{1}{2}) = b$$

$$u(-\frac{1}{2}, \frac{1}{2}) = c$$

$$u(0,0) = d$$

$$u(\frac{1}{2}, \frac{1}{2}) = e$$

The End

A particular 7-parameter solution to the 1-dimensional Bateman's equation

Soumadeep Ghosh

Kolkata, India

Abstract

In this paper, I describe a particular 7-parameter solution to the 1-dimensional Bateman's equation. The paper ends with "The End"

Introduction

The 1-dimensional Bateman's equation is given by

$$\frac{\partial u(x,t)}{\partial t} + u(x,t)\frac{\partial u(x,t)}{\partial x} = v\frac{\partial^2 u(x,t)}{\partial x^2}$$

A particular 7-parameter solution to the 1-dimensional Bateman's equation

A particular 7-parameter solution to the 1-dimensional Bateman's equation is given by

$$u(x,t) = -\frac{2vK_1{}^2 \tanh(K_1 x + K_2 t + K_3) + K_2}{K_1}$$

where

$$u(-\frac{1}{2},0) = \frac{6250 + 1177254 \tanh\left(\frac{9}{4}\right)}{2925}$$

$$u(\frac{1}{2},0) = \frac{6250 - 1177254 \tanh\left(\frac{189}{20}\right)}{2925}$$

$$u(0,-\frac{1}{2}) = \frac{6250 - 1177254 \tanh\left(\frac{161}{10}\right)}{2925}$$

$$v = \frac{86}{5}$$

$$K_1 = \frac{117}{10}$$

$$K_2 = -25$$

$$K_3 = \frac{18}{5}$$

The End

A particular solution to the differential equation $$\frac{\partial^3 \phi(x,y)}{\partial x^3} + \frac{\partial^3 \phi(x,y)}{\partial y^3} = 0$$

Soumadeep Ghosh

Kolkata, India

Abstract

In this paper, I describe a particular solution to the differential equation

$$\frac{\partial^3 \phi(x,y)}{\partial x^3} + \frac{\partial^3 \phi(x,y)}{\partial y^3} = 0$$

. The paper ends with "The End"

Introduction

The differential equation

$$\frac{\partial^3 \phi(x,y)}{\partial x^3} + \frac{\partial^3 \phi(x,y)}{\partial y^3} = 0$$

comes up in various fields including economics, finance, communications and physics.
In this paper, I describe a particular solution to the differential equation

$$\frac{\partial^3 \phi(x,y)}{\partial x^3} + \frac{\partial^3 \phi(x,y)}{\partial y^3} = 0$$

A particular solution to the equation $$\frac{\partial^3 \phi(x,y)}{\partial x^3} + \frac{\partial^3 \phi(x,y)}{\partial y^3} = 0$$

A particular solution to the equation

$$\frac{\partial^3 \phi(x,y)}{\partial x^3} + \frac{\partial^3 \phi(x,y)}{\partial y^3} = 0$$

is

$$\phi(x,y) = y^2 \left(-c_{20}x^5 - \frac{5c_{13}x^4}{2} - 10c_6x^3 + c_{17}x^2 + c_{10}x + c_3 \right) +$$

y $\left(-\frac{1}{5}2c_{19}x^5 - c_{12}x^4 - 4c_5x^3 + c_{16}x^2 + c_9x + c_2\right) - \frac{1}{20}x\left(c_{25}x^5 + 2c_{18}x^4 + 5c_{11}x^3 + 20c_4x^2 - 20c_{15}x - 20c_8\right) + y^5(x(c_{20}x + c_{13}) + c_6) + y^4(x(c_{19}x + c_{12}) + c_5) + y^3(x(x(c_{25}x + c_{18}) + c_{11}) + c_4) - \frac{c_{25}y^6}{20} + c_1$
where
$c_i(1 \leq i \leq 25)$ are arbitrary constants

The End

Anthrax

Soumadeep Ghosh

Kolkata, India

Abstract

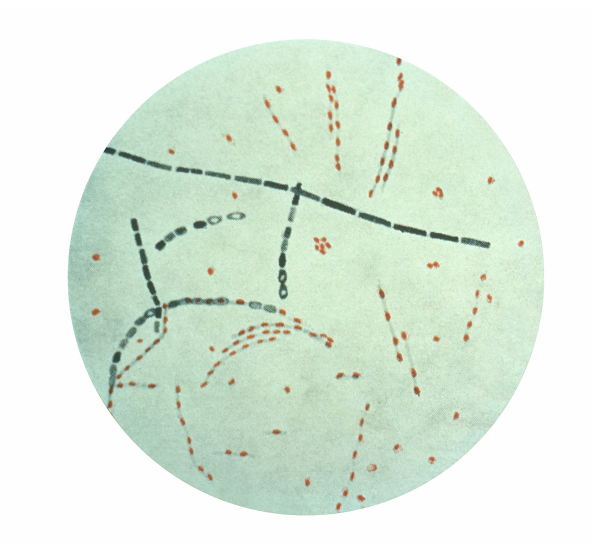
In this paper, I describe anthrax. The paper ends with "The End"

Introduction

Biological warfare is effective because the cost of a biological weapon is estimated to be about 0.05% of the cost of a conventional weapon in order to produce similar numbers of mass casualties per measure of area.

In this paper, I describe an effective biological warfare agent - anthrax.

Anthrax



Anthrax (Bacillus anthracis) is considered an effective biological warfare agent for several reasons:

1. Friendlies can be protected with antibiotics.
2. Anthrax forms hard spores that are perfect for air dispersal.
3. Anthrax rarely causes secondary infections.
4. Anthrax has a fatality rate higher than 90% in untreated patients.

The End

14 solutions to the differential equation $$\frac{\partial(ax+\exp(-bt))}{\partial t}+a\frac{\partial((ax+\exp(-bt))\log(\frac{b}{ax+\exp(-bt)}))}{\partial x}=0$$ to 8 significant figures

Soumadeep Ghosh

Kolkata, India

Abstract

In this paper, I describe 14 solutions to the differential equation

$$\frac{\partial(ax+\exp(-bt))}{\partial t}+a\frac{\partial((ax+\exp(-bt))\log(\frac{b}{ax+\exp(-bt)}))}{\partial x}=0$$

to 8 significant figures. The paper ends with "The End"

14 solutions to the differential equation $$\frac{\partial(ax+\exp(-bt))}{\partial t}+a\frac{\partial((ax+\exp(-bt))\log(\frac{b}{ax+\exp(-bt)}))}{\partial x}=0$$ to 8 significant figures

1. $a=-0.32005511, b=-87.000000, x=100.00000, t=-72.000000$
2. $a=0.10300624, b=-28.000000, x=-100.00000, t=-70.000000$
3. $a=0.16892423, b=-45.000000, x=-98.000000, t=-64.000000$
4. $a=-0.38699006, b=-81.000000, x=77.000000, t=-14.000000$
5. $a=0.075462449, b=-8.0000000, x=-39.000000, t=-12.000000$
6. $a=0.27480151, b=-62.000000, x=-83.000000, t=-8.0000000$
7. $a=-2.3510956, b=-14.000000, x=28.000000, t=0$
8. $a=0.28298419, b=60.000000, x=78.000000, t=1.2000000$
9. $a=-5.5380006\times10^{-9}, b=29.000000, x=0, t=1.3000000$
10. $a=-1.4955506\times10^{-16}, b=38.000000, x=0, t=1.9000000$
11. $a=-1.9700525\times10^{-52}, b=79.000000, x=0, t=3.0000000$
12. $a=-0.44902932, b=83.000000, x=-68.000000, t=4.5000000$
13. $a=-1.6610214\times10^{-72}, b=70.000000, x=0, t=4.7000000$
14. $a=-1.0649142, b=55.000000, x=-19.000000, t=4.9000000$

The End

Perturbation theory

Soumadeep Ghosh

Kolkata, India

Abstract

In this paper, I describe perturbation theory. The paper ends with "The End"

Introduction

There exists a theory of perturbation. In this paper, I describe perturbation theory.

The definition of a linear perturbation

For any function $f(x)$, we call h a **linear perturbation** of $f(x)$ if and only if

$$f(x+h) = \frac{f(x)+h}{x+h}$$

The definition of a non-linear perturbation

For any function $f(x)$, we call H a **non-linear perturbation** of $f(x)$ if and only if

$$f(x+H) = f(x)(\frac{f(x)+f(H)}{x+H})$$

Perturbation theory

For any function $f(x)$, the following three statements are true:

1. There exists at least one real linear perturbation.
2. There exists at least one real non-linear perturbation.
3. Any real non-linear perturbation H can be written as an infinite series of any real linear perturbation h.

The End