

# Generic Report

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## Abstract

What is life? Why are we here? Where did we come from?

## 1 Introduction

This is an introduction.

## 2 Preliminaries

[This](#) is the preliminary (hyperref without text labeling).

## 3 Blah Blah Bleeeh

This is the blah blah bleeeh section.

### 3.1 Blah Blah Blah Bleeh Bleeh Bleeh

Check out this cool Bibtext ref [[1](#), [this](#)], wooooooooooah, also it's in plain style. For some mind altering psychedelic, read [algorithm 1](#) for the experience. For some brain expanding julia code, read [brain expanding julia code](#).

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**Algorithm 1** Metropolis Chain

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**Input:**  $X^{(t)}$

$Y^{(t)} \sim q(\cdot|X^{(t)})$

$\rho(x, y) := \min \left\{ \frac{f(y) q(x|y)}{f(x) q(y|x)}, 1 \right\}$

$X^{(t+1)} := \begin{cases} Y^{(t)} & \text{w.p : } \rho(X^{(t)}, Y^{(t)}) \\ X^{(t)} & \text{otherwise} \end{cases}$

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(a) Cute Alto



(b) Minty and Alto

```

1  """
2  A doubly stochastic chain sampler that uses wrapped gaussian distributions on both directions in
    2D
3  with a fixed variance.
4  """
5  function wrapped_gaussian_sampler_2d(
6      state::Vector{T},
7      lower_left::Tuple{Real, Real},
8      upper_right::Tuple{Real, Real};
9      sigma::Real=1
10 ) where {T<:Real}
11     lower = [lower_left[1], lower_left[2]]
12     upper = [upper_right[1], upper_right[2]]
13     function loop_back(x, l, u) # assert periodic conditions on the rectangle.
14         return mod(x, u - l) + l
15     end
16     N = Normal(0, sigma)
17     return loop_back.(state + rand(N, 2), lower, upper)
18 end

```

## A Bleeh Bleeh Bleeh I am not Listening

This is the Bleeh Bleeh Bleeh I am not Listening section.

## B This section is in another .tex file

This is a new section.

### B.1 Subsection

This is a subsection.

### B.2 Cute Subsection

Check out this cute figure. In [fig 1a](#) is cute pink unicorn, and in [fig 1b](#), the green earth pony is minty, a cookie pone. Theyare cute together. Read source to understand the use of “subfloat” and “figure” together with “hyperref”.

## References

- [1] D. E. Knuth, *The T<sub>E</sub>X Book*. Addison-Wesley Professional, 1986.