

Peter Muller*, Sergey Kasparov, and Amy Nallikarn

This is a Sample Paper for the Symmetry 2024 Conference Proceedings

Abstract: This is a sample paper to show the Symmetry 2024 Conference Proceedings style. If references must be included in the abstract, please use the following form: [R. Hofer, A metric result for special sequences related the Halton sequences, J. Complexity **44** (2018), 23–29].

Keywords: Lie group, integrability, Noether symmetries, conservation laws

MSC2020: Primary 58E10; Secondary 34C14, 34A05

1 Introduction

Your text goes here. Separate text sections with the standard L^AT_EX sectioning commands. Let's do some mathematics. Let us briefly remark on the notation used throughout. Symbols \vec{x}, \vec{y} will denote vectors in Euclidean space written as column vectors, while the Greek symbol $\vec{\gamma}$ will denote a row vector. Consequently, \mathbb{R}^n will denote the space of column vectors and $\widehat{\mathbb{R}^n}$ that of row vectors. Whenever this distinction imposes inconveniences, for example in arguments of functions, elements of \mathbb{R}^n may be expressed as row vectors as well. The inner product in \mathbb{R}^n is $\langle \vec{x}, \vec{y} \rangle = \vec{y}^T \vec{x}$, and similarly, the duality between \mathbb{R}^n and $\widehat{\mathbb{R}^n}$ will be denoted by $\langle \vec{x}, \vec{\gamma} \rangle = \vec{\gamma} \vec{x}$. Integrals with respect to the Haar measure of a group H will be denoted by dh , and Δ_H will denote the modular function on H . For further details, see [1].

2 Preliminaries

Use the L^AT_EX automatism for your citations [3, 2, 1, 4].

***Corresponding author: Peter Muller**, Center for Theoretical Physics, College of Physics, Famous University, Montpellier, France; email: muller@math.monpellier.fr

Sergey Kasparov, Department of Mathematics, University of Nowhere, Nowhere, CA 97355, USA; email: kaspar@math.nowhere.edu

Amy Nallikarn, School of Mathematical Sciences, Technical University of Korat, Korat, Thailand; email: nalli@tuc.ac.th

2.1 Subsection Heading

One may use inline equations, $y' + 4y^2 = 0$, or displayed equations

$$\vec{a} \times \vec{b} = \vec{c} + \sum_{i=1}^n C_i$$

Equations will be labeled with equation numbers located on the right: Consider

$$h = T \left(\sum_{i=1}^n x_i \otimes y_i \right). \quad (1)$$

Please note that all internal labels for equations and all cites should be prefixed by the author's name in the form: *YourName:ref*. For example, if your last name is "Peters" then

```
\begin{equation}\label{peters:eq15}
h = T \left( \sum_{i=1}^n x_i \otimes y_i \mathbb{R} \right).
\end{equation}
```

2.1.1 Subsubsection Heading

Your text goes here. Use the L^AT_EX automatism for cross-references as well as for your citations, see Section 2.1 and also equation (1).

Definition 1. Let $A \subseteq \mathbb{R}^n$ be a convex set. A point $x \in A$ is called an extreme point if ...

Theorem 1. *Theorem text goes here.*

2.2 What is included in the dgryter style file

The following packages are automatically loaded:

- graphicx
- amsmath
- array
- tabularx

3 A bit of \LaTeX Mathematics

There is a nice way to get multiple lines, aligned on the equals sign:

$$\begin{aligned} f(x) &= x^2 - 2x + 1 \\ &= (x - 1)^2 \end{aligned}$$

$$\sum_{n=1}^{\infty} |x_n|^p < \infty.$$

The ampersand goes in front of the object that you want to use for alignment. The double backslashes start a new line. The *align* environment is part of the *amsmath* package that is being loaded automatically.

3.1 Some additional formatting

Labeling also works for sections and pages. We are in section 3.1 which begins on page 3. To get text within equation mode use *text*. Also note how to create curly brackets. Here is some typeset mathematics, copied from another document:

$$C^\infty = \{\phi : \phi \text{ has continuous derivatives of all orders.}\}.$$

The set C^∞ contains many of the familiar functions, such as e^x , $\sin(x)$, $\cos(x)$, polynomials, etc. We also define a subset of C^∞ :

$$C_0^\infty = \{\phi \in C^\infty : \phi(x) = 0 \text{ outside of some finite interval.}\}$$

that is, there exists a number R so that $\phi(x) = 0$ for $x \notin [-R, R]$. These are sometimes called the C^∞ functions of **compact support**. (The **support** of a function f is the closure of the set where $f(x) \neq 0$, and a subset of \mathbb{R} is **compact** if it is closed and bounded.)

The function that is identically equal to 0 is obviously in the set C_0^∞ , but it is not immediately clear that there are any other functions in this set. Consider the function defined by

$$\phi(x) = \begin{cases} 0 & \text{if } |x| \geq 1 \\ e^{1/(x^2-1)} & \text{if } |x| < 1. \end{cases}$$

A little work (you need to check that ϕ is differentiable to any order at ± 1) shows that this function is an element of C_0^∞ , so that C_0^∞ contains non-trivial functions. We call the functions in C_0^∞ **test functions**, and denote them using Greek letters such as ϕ, ψ , etc.

4 Conclusion

In this paper we have shown that solutions to the given problem exist, and are unique under the specified additional assumptions.

Please use the "amsplain" format for the bibliography.

See <https://www.bibtex.com/s/bibliography-style-misc-amsplain/> for examples.

Acknowledgment: The authors are indebted to Ronald Tochunovsky for fruitful discussions.

Funding: This work was financially supported by the Fundamental Research Fund for Innovation, National Research Foundation of the Republic of France.

The final layout may be different; in particular, the fonts may change.

Bibliography

- [1] G. B. Folland, *Real analysis: modern techniques and their applications*, 2nd ed., Wiley, New York, 1999.
- [2] R. V. Moody and J. Patera, *Fast recursion formula for weight multiplicities*, Bull. Amer. Math. Soc. **7**(2) (1982), 237–242.
- [3] B. Rom and D. Walnut, *Sampling on unions of shifted lattices*, ch. Harmonic Analysis and Applications, pp. 289–323, Birkhäuser, Boston, 2006.
- [4] A. Q. Stein, *Tight frames and coding theory*, Proceedings of the 2013 Annual Meeting in Harmonic Analysis, 2013, Glasgow, August 1–4, 2013, pp. 23–42.