Ivan Toftul

Introduction

Results

Second

Conclusion

References

Extra slides

# Long title

Ivan Toftul, Your Collegues, ...

Australian National University

toftul.ivan@gmail.com

August 29, 2022 EVENT @ PLACE

Ivan Toftul

### Introduction

#### Introduction

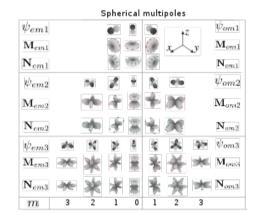
### Results

First Second

Conclusion

References

- ▶ One
- ► Two



Ivan Toftul

## Second slide in introduction

#### Introduction

Results

First

Conclusion

References

$$\int \mathrm{d}x f(x)$$

Introduction

Results

References

Extra slides

Conclusion

From<sup>1</sup> we have

 $sin(x) \approx x$ 

Example

For x = 0.1 we have

 $\sin(0.1) = 0.09983341664682815$ 

<sup>&</sup>lt;sup>1</sup>M. E. Muldoon, A. A. Ungar, Math. Mag. 69, 3-14, ISSN: 0025-570X (Feb. 1996).

Ivan Toftul

# Second slide with results

Introduction

Results

First

Second

Conclusion

References

$$\sin(x) \approx x + \frac{x^3}{3!}$$

Ivan Toftul

# Conclusions

Introduction

Results

Second

Conclusion

References

- $1. \ \mathsf{One}$
- 2. Two

Ivan Toftul

References

Introduction

Results

Conclusion

References

Extra slides

M. E. Muldoon, A. A. Ungar, *Math. Mag.* **69**, 3–14, ISSN: 0025-570X (Feb. 1996).

Ivan Toftul

Introduction

....

First

Conclusion

Referen

$$\hat{\chi}_{\rm 2D\ TMDC}^{(2)}$$
 tensor in cylindrical coordinates

$$\chi^{(2)}_{\{\ell nm\}_{\rm cyl}} = R_{\ell i}^{-1} R_{nj}^{-1} R_{mk}^{-1} \chi^{(2)}_{\{ijk\}_{\rm cart}}, \qquad R^{-1}(\varphi) = \begin{pmatrix} \cos(\varphi) & \sin(\varphi) & 0 \\ -\sin(\varphi) & \cos(\varphi) & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$\begin{split} \chi^{(2)}_{\text{2D TMDC}} &= \tilde{\chi}^{\text{TMDC}}_{\text{2D}} \left[ \left[ \begin{array}{ccc} 0 & -1 & 0 & 0 \\ -1 & 0 & 0 & 0 \\ 0 & 0 & 0 \end{array} \right] \left[ \begin{array}{cccc} -1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 \end{array} \right] \left[ \begin{array}{cccc} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{array} \right] \right]_{\left(\hat{\mathbf{x}}\hat{\mathbf{y}}\hat{\mathbf{z}}\right)} \\ &= \tilde{\chi}^{\text{TMDC}}_{\text{2D}} \left[ \left[ \begin{array}{cccc} -\sin(3\varphi) & -\cos(3\varphi) & 0 \\ -\cos(3\varphi) & \sin(3\varphi) & 0 \\ 0 & 0 & 0 \end{array} \right] \left[ \begin{array}{cccc} -\cos(3\varphi) & \sin(3\varphi) & 0 \\ \sin(3\varphi) & \cos(3\varphi) & 0 \\ 0 & 0 & 0 \end{array} \right] \left[ \begin{array}{cccc} 0 & 0 & 0 \\ 0 & 0 & 0 \end{array} \right] \right]_{\left(\hat{\mathbf{r}},\hat{\boldsymbol{\varphi}},\hat{\mathbf{z}}\right)} \\ &= \tilde{\chi}^{\text{TMDC}}_{\text{2D}} \left[ \frac{1}{2} e^{-3i\varphi} \left( \hat{\boldsymbol{\varphi}}\hat{\boldsymbol{\varphi}}\hat{\boldsymbol{\varphi}} + i\hat{\boldsymbol{\varphi}}\hat{\boldsymbol{\varphi}}\hat{\boldsymbol{r}} + i\hat{\boldsymbol{\varphi}}\hat{\boldsymbol{r}}\hat{\boldsymbol{\varphi}} - \hat{\boldsymbol{\varphi}}\hat{\boldsymbol{r}}\hat{\boldsymbol{r}} + i\hat{\boldsymbol{r}}\hat{\boldsymbol{\varphi}}\hat{\boldsymbol{\varphi}} - \hat{\boldsymbol{r}}\hat{\boldsymbol{\varphi}}\hat{\boldsymbol{r}} - \hat{\boldsymbol{r}}\hat{\boldsymbol{r}}\hat{\boldsymbol{\varphi}} - i\hat{\boldsymbol{r}}\hat{\boldsymbol{r}}\hat{\boldsymbol{r}} \right) \\ &+ \frac{1}{2} e^{+3i\varphi} \left( \hat{\boldsymbol{\varphi}}\hat{\boldsymbol{\varphi}}\hat{\boldsymbol{\varphi}} - i\hat{\boldsymbol{\varphi}}\hat{\boldsymbol{\varphi}}\hat{\boldsymbol{r}} - i\hat{\boldsymbol{\varphi}}\hat{\boldsymbol{r}}\hat{\boldsymbol{\varphi}} - \hat{\boldsymbol{\varphi}}\hat{\boldsymbol{r}}\hat{\boldsymbol{r}} - i\hat{\boldsymbol{r}}\hat{\boldsymbol{\varphi}}\hat{\boldsymbol{\varphi}} - \hat{\boldsymbol{r}}\hat{\boldsymbol{\varphi}}\hat{\boldsymbol{r}} - \hat{\boldsymbol{r}}\hat{\boldsymbol{r}}\hat{\boldsymbol{\varphi}} + i\hat{\boldsymbol{r}}\hat{\boldsymbol{r}}\hat{\boldsymbol{r}} \right) \right] \end{split}$$