Flux-Y-Beamer Demo

副标题：演示文件 v0.1

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Table of Content

Flux-Y is a modern style beamer presentation modified based on Flux-beamer. It is provided as a work in progress version and may suffer from inconsistencies. Sources and complementary information are available at

https://github.com/YanQH-Gausoul/Flux-Y-Beamer

Five Flux-beamer color palettes.

`\usetheme[style=asphalt]{flux}`

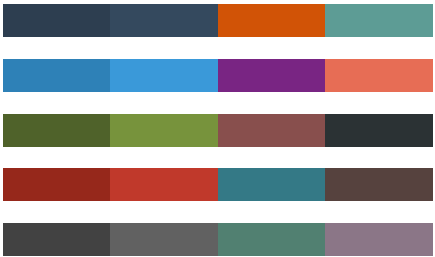
Asphalt

Blue

Green

Red

Gray



Five Flux-Y-beamer color palettes.
One for THU purple theme color.
Four for selected Pantone colors.
`\usetheme[style=asphalt]{flux}`

Default English typographies

- Regular
- Alert
- Example
- *Italic*
- **Bold**

默认中文字体，可在导言区分别设置，需字体库支持

- 常规
- 醒目
- 例子
- 斜体
- **粗体**

Citation style [*Babington, 1993*] [*Eston, 1993*]

Items

- Cats
- Dogs
- Birds

Enumerations

1. First
2. Second
3. Last

Descriptions

Apples	Yes
Oranges	No
Grappes	No

Note the following demo slides are directly taken from metropolis theme. Copyright 2014 Matthias Vogelgesang.
Give a look at https://github.com/matze/mtheme/tree/master/demo

表 1: Largest cities in the world (source: Wikipedia)

City	Population
Mexico City	20,116,842
Shanghai	19,210,000
Peking	15,796,450
Istanbul	14,160,467

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Mexico City	20,116,842
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Flux theme comes with four pre-defined block style collections.
Native style (default) available as `\setblockstyle{native}`

Default

Block content.

Alert

Block content.

Example

Block content.

Flux theme comes with four pre-defined block style collections.
NoBackground style available as `\setblockstyle{nobackground}`

Default

Block content.

Alert

Block content.

Example

Block content.

Flux theme comes with four pre-defined block style collections.
Metropolis style available as `\setblockstyle{metropolis}`

Default

Block content.

Alert

Block content.

Example

Block content.

Flux theme comes with four pre-defined block style collections.
emph style available as `\setblockstyle{emph}`

Default

Block content.

Alert

Block content.

Example

Block content.

Flux-Y offer pre-defined text box, which simply display a sentence using Flux-beamer block styles without title.

Default text content.

Alert text content.

Example text content.

Default text content.

Alert text content.

Example text content.

This is a plain frame.
Use it to display full page images.

目录

$$\partial_t \ln\langle T\rangle = -\sqrt{2\varepsilon_0}\partial_x\underline{\langle\tilde{V}_x\tilde{T}\rangle_y} + \chi_{\rm neo}\partial_x^2\ln\langle T\rangle$$

$$\downarrow$$

$$\langle\tilde{V}_x\tilde{T}\rangle_k$$

$$\downarrow$$

$$\sim R\left(\omega - k_y\Omega_Z - b_k\bar{\Omega}_D\right)\langle\tilde{V}_x^2\rangle_k\left[\partial_x\overline{\Delta}\phi_Z(..) - \partial_x\ln\langle T\rangle(..)\right]$$

$$\downarrow$$

$$(\chi_4^{\text{non-res}} + \chi_4^{\text{res}})\partial_x\overline{\Delta}\phi_Z - (\chi_3^{\text{non-res}} + \chi_3^{\text{res}})\partial_x\ln\langle T\rangle$$

$$\chi \text{ model}\downarrow$$

Equation (2)

$$\partial_t\left[\overline{\Delta}\phi_Z\right] = -\partial_x\underline{\langle\tilde{V}_x\overline{\Delta}\tilde{\phi}\rangle_y} + \nu_c\partial_x^2\overline{\Delta}\phi_Z$$

$$\underline{\langle\tilde{V}_x\overline{\Delta}\tilde{\phi}\rangle_k = -\langle\tilde{V}_x\delta q\rangle_k + \langle\tilde{V}_x\tilde{T}\rangle_k}$$

$$\downarrow$$

$$R\left(\omega - k_y\Omega_Z\right)R\left(\omega - k_y\Omega_Z - k_yb_k\bar{\Omega}_D\right)\langle\tilde{V}_x^2\rangle_k\partial_x\ln\langle T\rangle(..)$$
$$-R\left(\omega - k_y\Omega_Z - k_yb_k\bar{\Omega}_D\right)\langle\tilde{V}_x^2\rangle_k\partial_x\overline{\Delta}\phi_Z(..)$$

$$\downarrow$$

$$\chi_1^{\text{non-res}}\frac{\partial_x\ln\langle T\rangle}{\sqrt{2\varepsilon_0}} - (\chi_2^{\text{non-res}} + \chi_2^{\text{res}})\partial_x\overline{\Delta}\phi_Z$$

$$\chi \text{ model}\downarrow$$

Equation (1)

$$\tilde{T}_{\mathbf{k}} = R(\ldots)\left[\partial_x\overline{\Delta}\phi_Z(\ldots) - \partial_x\ln\langle T\rangle(\ldots)\right]\tilde{V}_x(k)$$

$$\delta q_k = R(\omega - k_y\Omega_Z)\left[\tilde{T}_k(\ldots) - \partial_x\langle q\rangle(\ldots)\right]\tilde{V}_x(k)$$

- 温度 and 涡度 梯度同时出现[2]

$$C_i\overline{\Delta}\tilde{\phi} = \tau\tilde{T} - \delta q$$

$$\chi_3 = \Re\sum_k[\tilde{V}_x(k)]^2\frac{i}{\omega - k_y\left(\Omega_Z + b_k\bar{\Omega}_D\right)}$$

- $\omega = \omega_R + i\gamma \Rightarrow$ 分离共振和非共振贡献
- 共振输运只出现在涡量通量中

[2] Connections to Ref. [*Adams, 1993*]

$$\frac{\partial}{\partial t}\left(\overline{\Delta}\phi_Z\right) = -\frac{\partial}{\partial x}\left(\frac{1}{C_i}\vartheta\chi^{\mathrm{n}}\frac{\partial}{\partial x}\frac{\ln\langle T\rangle}{\sqrt{2\varepsilon_0}}\right) + \frac{\partial}{\partial x}\left[\vartheta\chi\frac{\partial}{\partial x}(\overline{\Delta}\phi_Z)\right] + \nu\frac{\partial^2}{\partial x^2}\overline{\Delta}\phi_Z \tag{1}$$

$$\frac{\partial}{\partial t}\ln\langle T\rangle = -\frac{\partial}{\partial x}\left[C_i\sqrt{2\varepsilon_0}(1-\vartheta)\chi\frac{\partial}{\partial x}\left(\overline{\Delta}\phi_Z\right)\right] + \frac{\partial}{\partial x}\left[\chi\frac{\partial}{\partial x}\ln\langle T\rangle\right] + \chi_{\mathrm{neo}}\frac{\partial^2\ln\langle T\rangle}{\partial x^2} \tag{2}$$

边界条件

$$\left.\frac{\partial}{\partial x}\overline{\Delta}\phi_Z\right|_{\mathrm{B}} = 0 \tag{3}$$

$$\left.\frac{\partial}{\partial x}\ln\langle T\rangle\right|_{\mathrm{B}} \equiv \kappa_T^{\mathrm{B}} = \mathrm{Const.} \tag{4}$$

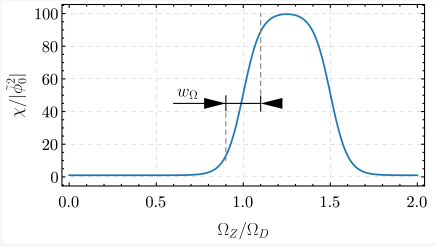
$$\left.\frac{\partial}{\partial x}\langle\tilde{U}^2\rangle\right|_{\mathrm{B}} = 0, \quad \text{or} \quad \left.\frac{\partial}{\partial x}\langle\tilde{\phi}^2\rangle\right|_{\mathrm{B}} = 0 \tag{5}$$

And: $\Omega_Z = \partial_x\phi_Z$, set B.C. for Ω_Z as:

$$\left.\Omega_Z\right|_{\mathrm{B}} = 0 \tag{6}$$

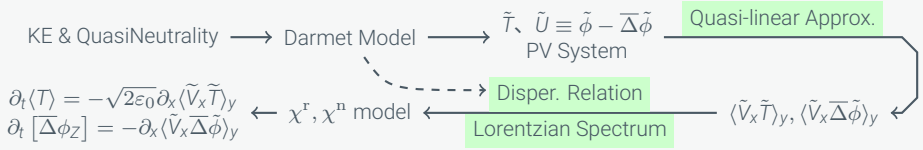
Flux-driven System

分段输运系数模型 $\chi \equiv (\chi^{\mathrm{n}} + \chi^{\mathrm{r}})|\tilde{\phi}_0|^2$



Eq. (1), (2), (??) + 边界条件 (3-6) + 输运系数模型 $\Longrightarrow$ 演化系统

演化系统



剖面模式（pattern）

1. 共振: “Wave + Particle + Flow”
2. 涡度通量中仅温度梯度的非共振贡献
3. 流结构 Ω_Z 调制剖面状态:
   - 非共振态：陡峭的温度剖面
   - 共振态：(hypothesized) Near-marginal 温度剖面
4. 边界热通量阈值条件 $\Delta\kappa_T^{\mathrm{crit}}$
5. 台阶宽度决定于：$\delta_b, \chi^{\mathrm{r}}/\chi^{\mathrm{n}}, \kappa_T^{\mathrm{B}}$

可能的应用

- ZF 的无碰撞饱和
- 模型推广到快离子和湍流相互作用
- 范式?

[*Yan & Diamond, 2022*]

Thank You!

Thank You!

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Inspired by **Metropolis** theme from Matthias Vogelgesang.
https://github.com/matze/mtheme and **Flux-Beamer** theme from Peter van Berg.
https://github.com/pvanberg/flux-beamer