

AGRS
CHINA AERO-GEOPHYSICAL AND
BIOMASS REMOTE SENSING
CENTER FOR LAND AND RESOURCES



Adobe Illustrator & 科研制图

于峻川

(jason.yu.mail@qq.com)

CONTENT

汇报提纲

AI 是什么?

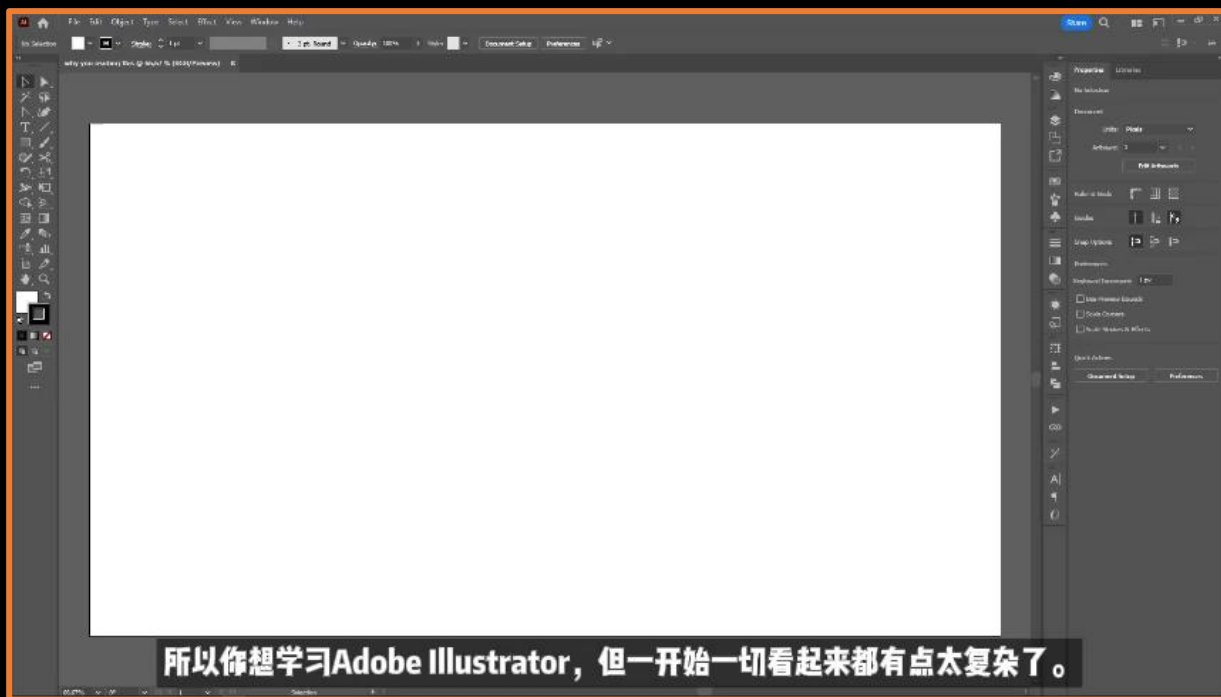
应用案例分析

AI 界面介绍

学习计划

什么是Adobe Illustrator

Adobe Illustrator是行业领先的图形设计工具，它使您可以设计您能想象的任何东西 - 从标志和图标到图形和插图 - 。您可以创建任何大小的图形并使他们呈现出的效果看起来与您设计的完全一样。

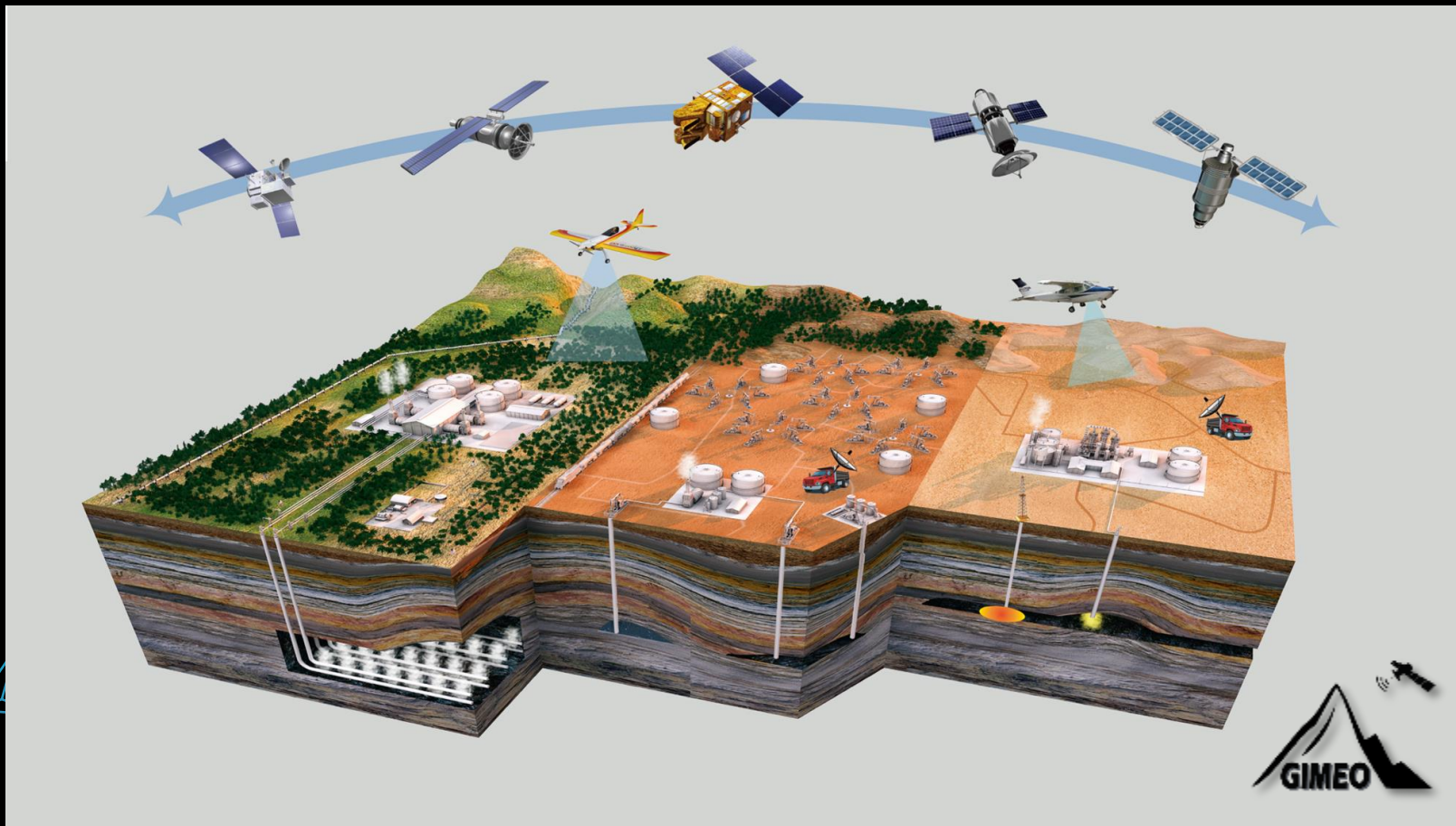


所以你想学习Adobe Illustrator，但一开始一切看起来都有点太复杂了。

为什么用Adobe Illustrator

- 功能强大，多种专业工具支持，一站式掌握绘图
- 专业性强，适合场景及结构复杂的绘图场景，多种输出规格以及专业的色彩控制，可支持工业级产品输出
- 定制性和兼容性强，跨操作系统，支持多种数据格式，支持自定义颜色、样式、形状、图案库和符号库
- 资源广泛，强大的社区资源和矢量网站，主流期刊机构支持

Scientific illustration



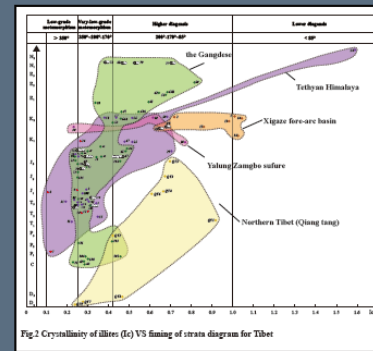
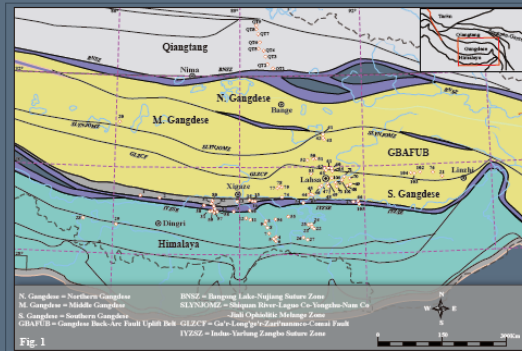
Conference poster

Very low-grade metamorphic rocks in some representative districts in Tibet

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Very low grade metamorphic rocks are widely distributed in Tibet, providing an insight into deformation and metamorphism during the evolution of the Tibetan Plateau. Eighty five Samples of clay mineral-bearing rocks has been collected from various strata including D, P, T₁, T₂, T₃, J, K, and N strata in the Qiangtang terrane, the Gangdese, the Yarlung Zangbo suture and the Tethyan Himalaya (Fig.1). Analyses and refining of clay minerals in samples have been conducted in the Laboratory of X-ray Diffraction, Institute of Petroleum Exploration, and calibrated by the international standards provided by L.N.Warr. Index of illite crystallinity (Ic) along with average thickness of crystal layers of illite, reflectivity of vitrinite and of clay mineral association have been employed as indicators of degree of very low-grade metamorphism. The scheme of classification of very-low grade metamorphism based on clay mineral indexes (mainly index of illite crystallinity) has been used in the present work, that is, low metamorphism (Ic=0.25), higher very-low grade metamorphism (Ic = 0.25-0.30), lower very-low grade metamorphism (Ic = 0.30-0.42) and diagenesis (Ic<0.42).



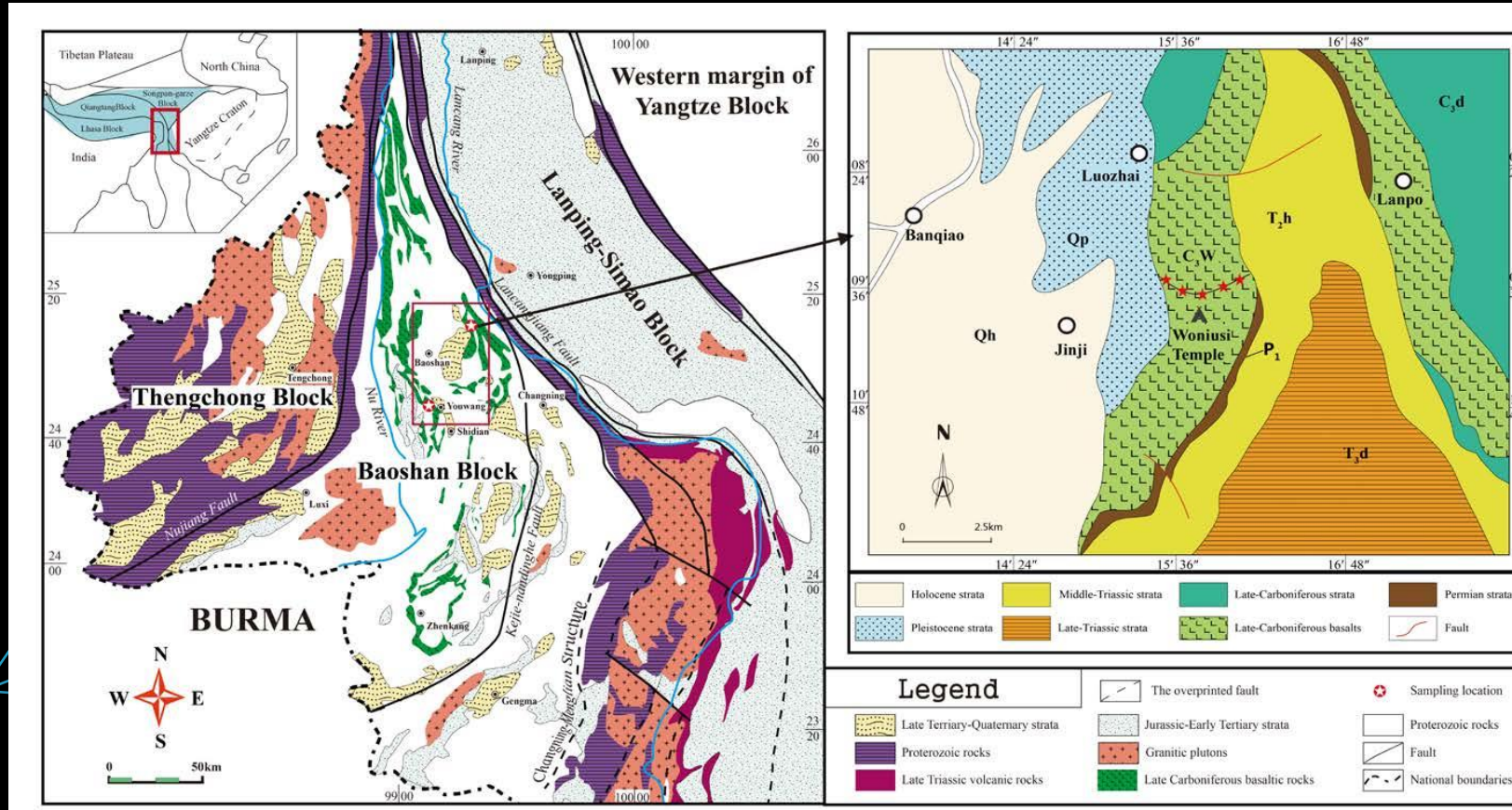
The analytical results listed Table 1 and Fig. 2 show interesting information. In the Qiangtang terrane, clay minerals in the Jurassic strata have indexes of illite crystallinity (Ic) 0.47-0.70, indicating higher diagenesis and in favor of petroleum-generation. However, index of illite crystallinity (Ic) for the Devonian is 0.23, indicating low metamorphism. Indexes of illite crystallinity (Ic) for the J-K strata in middle Gangdese are mostly 0.37-0.25 (very-low grade metamorphism) and a few 0.78-0.48 (diagenesis). Indexes of illite crystallinity (Ic) for the C-P strata in eastern Gangdese are mostly 0.25-0.42 (very-low grade metamorphism) and a few 0.20-0.25 (low metamorphism). The Mesozoic and Cenozoic magmatism and related mineralization are very strong in the Gangdese, which may affect in some extent on indexes of illite crystallinity. In Tethyan Himalaya, clay mineral-bearing rocks from P, T₁, T₂, T₃, J, and K strata underwent low-very low grade metamorphism, having indexes of illite crystallinity (Ic) 0.12 for P stratum, 0.21 for T₁ stratum and 0.22-0.33 for the strata from T₂ to J, whereas K and N strata underwent diagenesis, having Ic = 0.52 and 1.61, respectively. Metamorphic degree generally reduced from older strata to younger strata according to clay mineral indexes. The rocks affected by magmatism or by major faulting, however, were out of the general trend and increased their metamorphic degree by 0.1-0.3 units reduction of index of illite crystallinity. Rocks within Yarlung Zangbo suture show higher metamorphic degree than those in Tethyan Himalaya. For instance, while the late Triassic has 0.19 of index of illite crystallinity in the former (the Yarlung Zangbo suture), 0.27-0.33 of indexes of illite crystallinity in the latter. The early Cretaceous has 0.28 of index of illite crystallinity in the former, whereas 0.52 in the latter. However, the late Cretaceous Xigaze Group formed in a fore-aft environment was weakly metamorphosed, having Ic 0.7-1.6 and all falling into diagenesis field.

References: [1] Frey, M., 1987, Blackie, Glasgow, 9-58. [2] Bi Xianmei and Mo Xuanxue, Earth Science Frontiers 11(1):287-294.

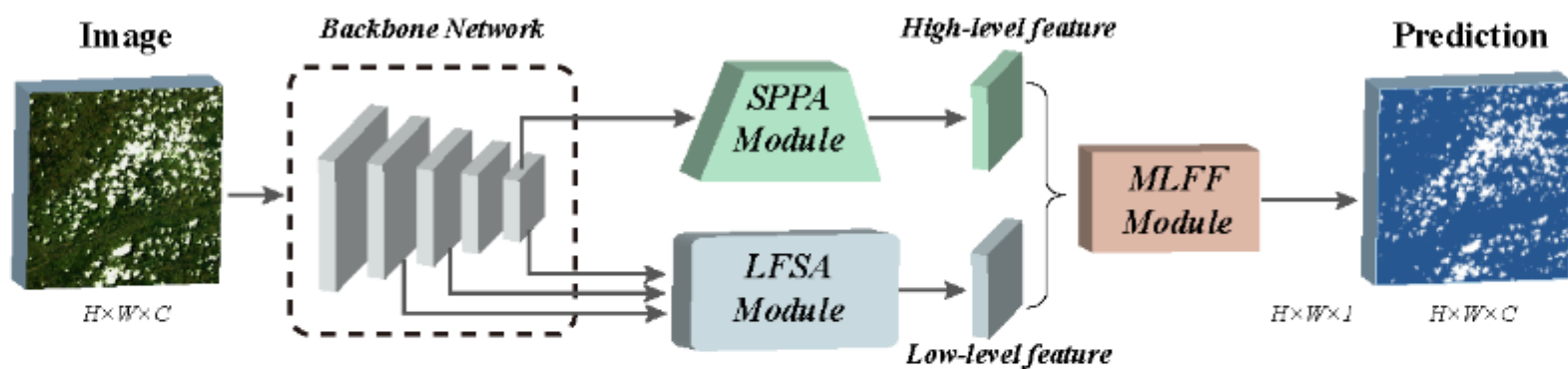
Table 1

Sample No.	Strata	Age	Location	Index of illite crystallinity (Ic)	Reflectivity of vitrinite (R _v)	Clay mineral association	Metamorphic grade
Q1	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q2	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q3	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q4	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q5	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q6	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q7	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q8	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q9	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q10	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q11	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q12	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q13	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q14	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q15	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q16	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q17	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q18	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q19	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q20	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
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Q23	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q24	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
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Q27	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
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Q29	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q30	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q31	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q32	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q33	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q34	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
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Q36	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q37	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
Q38	Qiangtang	J	Qiangtang	0.47-0.70	0.10-0.15	Illite	Higher Diagenesis
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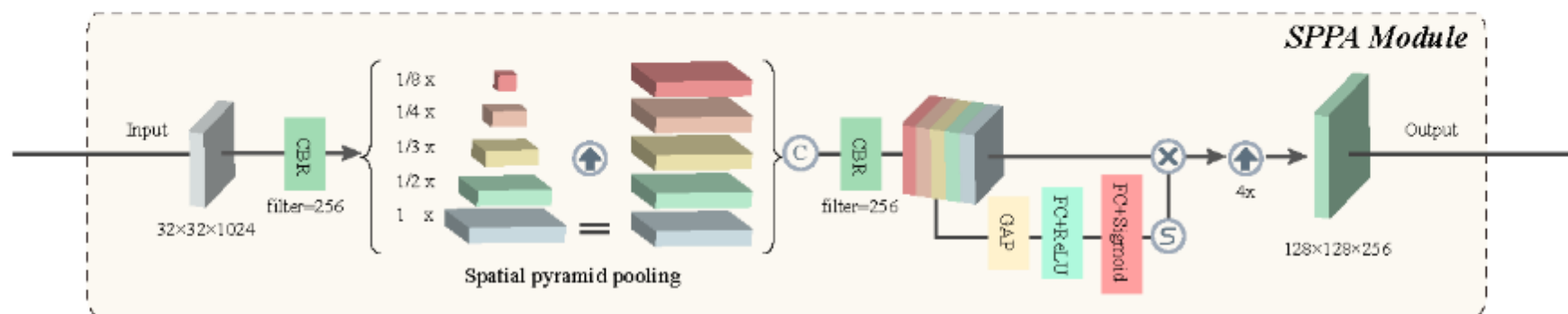
Geological map



Neural network architecture



(a)



(b)

Interface

AI操作界面



Welcome

- 新建不同规格的画板
- 访问已有工程文件

Interface

AI操作界面

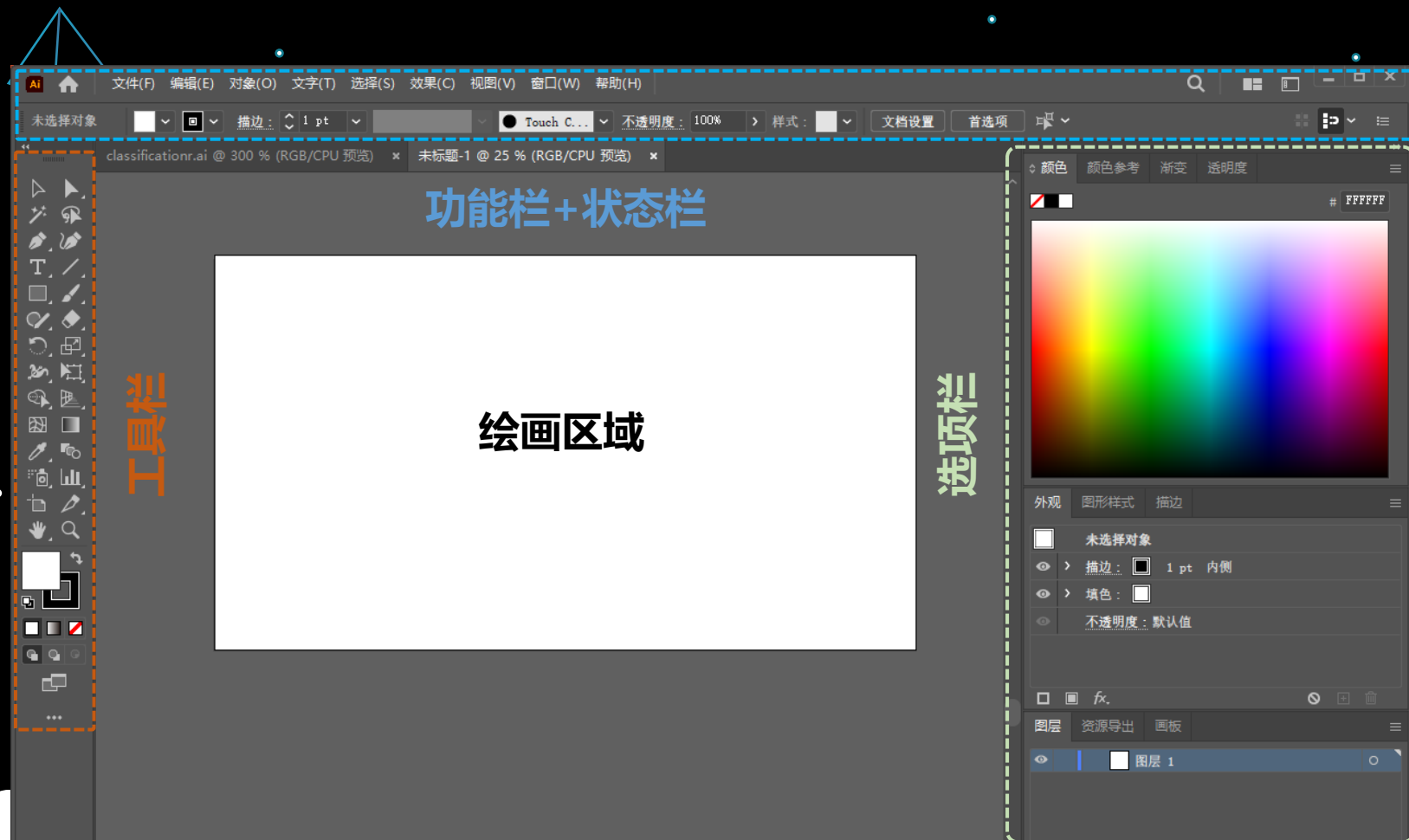


Welcome

- 自定义画板尺寸
- 打印边界
- 颜色模式
(RGB/CMYK)

Interface

AI操作界面



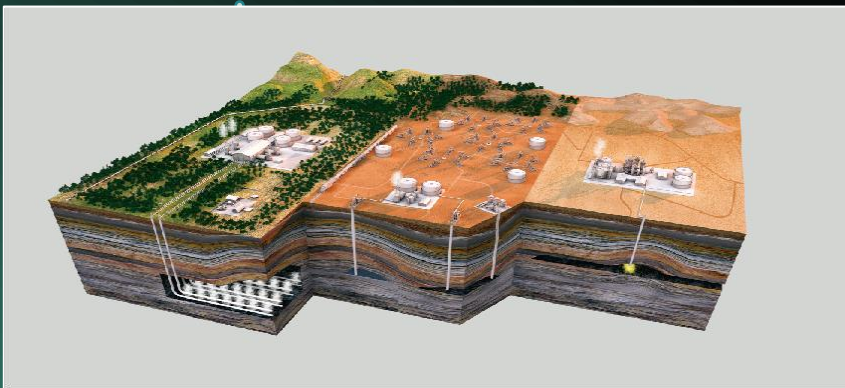
Welcome

- 工具栏
- 功能栏+状态栏
- 选项栏
- 文件打开保存
- 颜色、图层
- 参考线、标尺
- 常用浏览快捷键

TASK 1

案例分析

科学插图绘制



置入外部元素

- 导入外部图片 / 矢量化
- 链接模式 / 嵌入模式

矢量图形绘制及编辑

- 形状工具 / 弧线的绘制
- 选择工具 / 直接选择工具

吸管 / 外观 / 导出

- 颜色更改 / 透明度更改
- 文件另存 / 导出

TASK 2

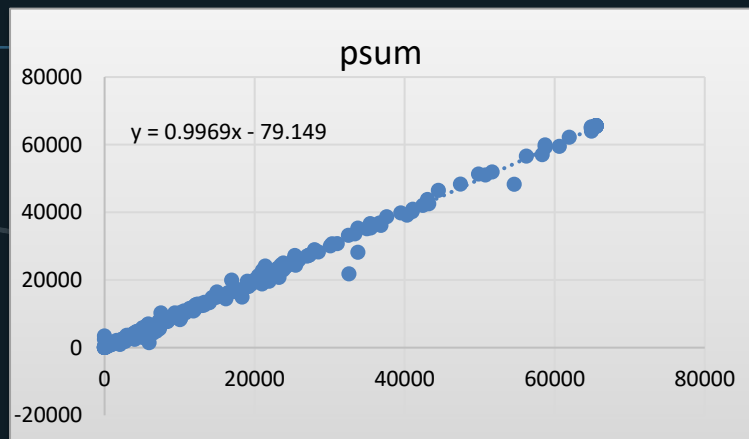
案例分析

EXCEL 表格美化

Excel 表格

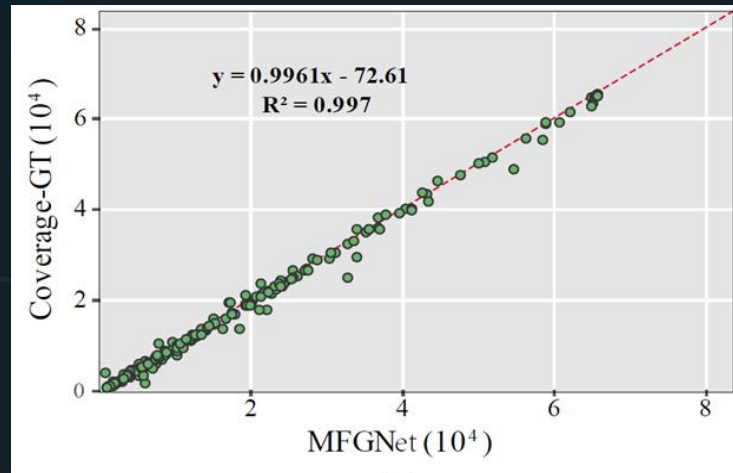
矢量元素构成

- 字体
- 图形
- 坐标轴
- 图例



AI 图表

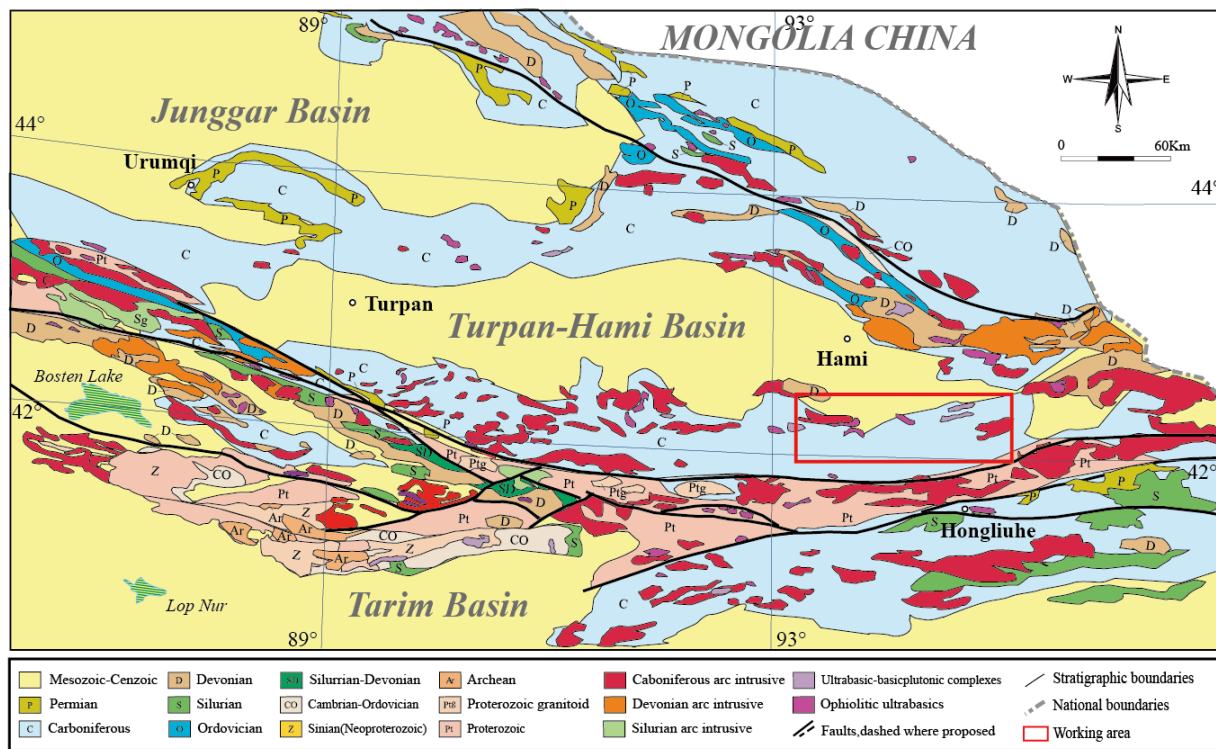
- 解组 / 编组
- 文字上下标
- 魔棒选择
- 填充和描边



TASK 3

案例分析

地质图绘制与整饰



几何拓扑

- 钢笔工具勾绘地质图
- 形状生成器使用

地图整饰

- 指南针 / 比例尺
- 图例绘制

TASK 4

案例分析

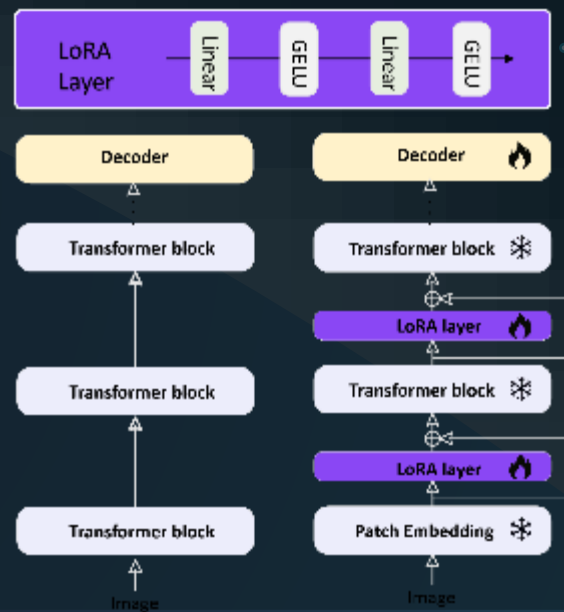
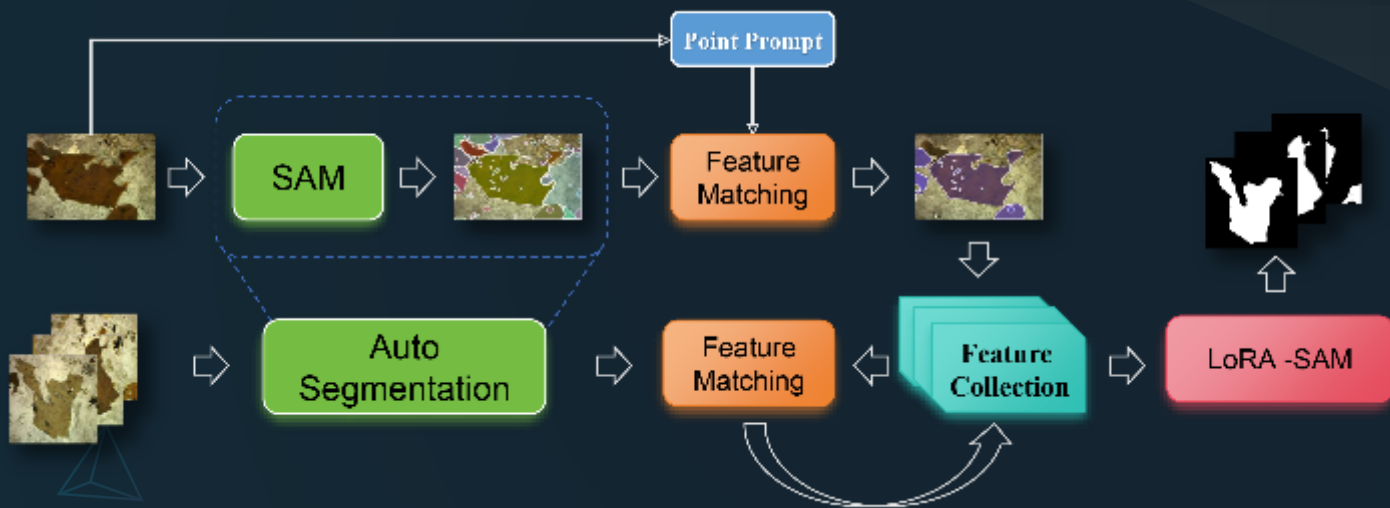
技术流程图制作

▽ PS 与 AI 联动

- 图片目标
- PS编辑
- 取消链接
- 再次链接

▽ PPT 与 AI 联动

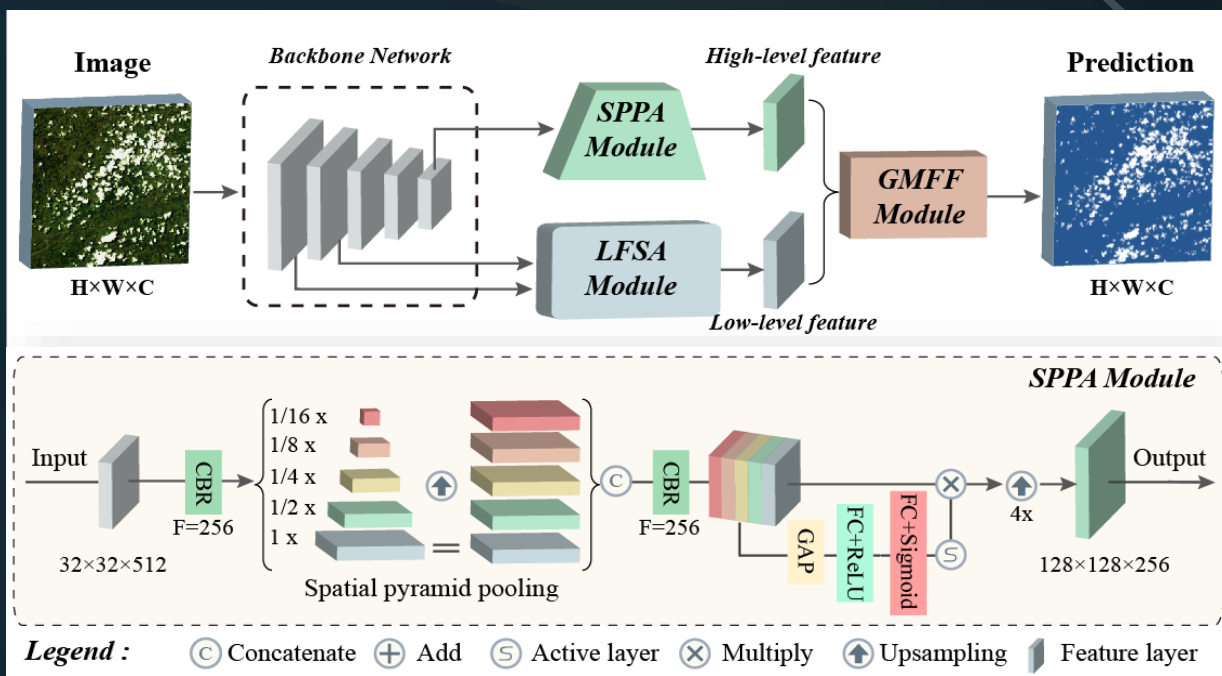
- 多目标解组
- 阴影问题
- 图标共享
- 矢量元素共享



TASK 5

案例分析

神经网络结构绘制



3D模型

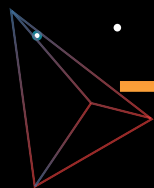
- 3D建模
- 模型贴皮

网络设计

- 维度变化
- 特征 / 计算

学习计划

INFOGRAPHIC



一周掌握Adobe Illustrator



第一天



熟悉界面
出入文件类型

第二天



熟悉常用工具栏
掌握画图工具

第三天



尝试几何拓扑
了解图面装饰

第四天



多来源图件美化
了解出版出图要求

第五天



学习色彩搭配
掌握结构和设计感

第六天



掌握科学绘图技巧
尝试其他类型设计



1. 《生命科学插图 从入门到精通 Adobe Illustrator使用技巧》
2. B站-琅琊一肥: [《【Adobe illustrator科研绘图】快速入门指南》](#)



THANKS



AGRS
CHINA AERO GEOPHYSICAL AND
SURVEY & REMOTE SENSING
CENTER FOR LAND AND RESOURCE



jason.yu.mail@qq.com



15101157141



<https://github.com/JunchuanYu>



<https://junchuanyu.netlify.app/posts>



微信



45度科研人