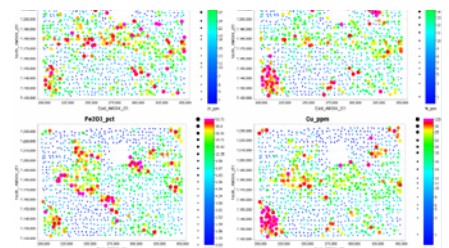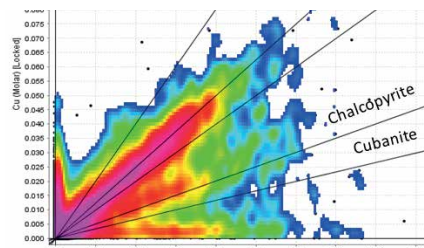# ioGAS™

Effortlessly detect patterns, anomalies and relationships in your geoscience data.

IioGAS™ is a leading exploratory data analysis software application developed specifically for the resources industry. Traditional methods to analyse results could take many hours and is always prone to human error, ioGAS™ in comparison can generate accurate results in a fraction of the time. Over the past decade a wide range of visual analytics and advanced quantitative tools have been developed to obtain a greater insight into the underlying structure of your data.







## Inbuilt Intelligence

- Over ten years of knowledge from ioGAS™ experts has created optimised workflows and easy-to-use tools based on industry best practice in interpretive techniques

- From basic statistical outputs through to advanced robust multivariate data analysis, ioGAS™ can help you to gain greater insight into your data regardless of your level of experience.

## Streamlined Data Workflows

- Exploration target generation, outlier and anomaly identification, rock classification, alteration zoning, important variable extraction

- Geometallurgical domaining and 3D resource model integration to better estimate plant throughput behaviour and improve mine planning

- Structural data analysis

## Have Confidence

Have confidence you are using industry leading software to reduce data processing time, focus on data analysis and produce actionable results.

Find out why ioGAS™ is used by over 500 commercial, government and academic research organisations globally.

Download a **FREE trial of ioGAS™ software** from **www.reflexnow.com/iogas** and get started today.

# ioGAS™

## Technical Specifications

- Microsoft Windows OS 7, 8 and 10
- Apple Mac OS X 10.8.3 or later.

## Advanced Data Handling

- Supported file formats
  - Excel, text, csv
  - SQL Server, MS Access
  - MapInfo tab
- XRF data import utility
- Join/append new data
- Validate data using Data Doctor
- Match imported column names to defined element/oxide/unit combinations using the ioGAS™ 'aliasing' logic
- Random data subsampling
- Apply templates to multiple datasets or project areas
- Track workflow progress using saved checkpoints.

## Interoperability

- IMDEXHUB-IQ™, acQuire GIM Suite
- Leapfrog Geo, GOCAD® Mining Suite and Geoscience ANALYST live links
- Google Earth, MapInfo, ArcGIS Pro and QGIS.

## Dynamic Graphical Environment

- Display sample information for up to three variables using colour, shape and size attributes
- Live update across all displays based on selections and attributes within your data
- Render groups of data visible and invisible on-the-fly
- Save attribute schemes and apply to new data
- Add attribute information back to the dataset as new variable columns
- Work on a subset of data using filters.

## Statistics, Graphs, Maps

- Summary statistics reports that respond dynamically to parameter selection, data visibility, data grouping and multivariate or univariate modes
- Frequency table, Pearson's and Spearman Rank correlation matrices
- XY scatter, probability, ternary, box and scatterbox plots
- View spatial distribution for multiple variables instantaneously using selected thematic operations
- Multi-element "times background" maps
- Point density heat maps
- Optimised interpolation gridding algorithm.

## Inbuilt Reference Libraries

- Classification diagrams: rock, element ratio PER/GER, alteration, regolith, Ni and Cu exploration, IOGC, metamorphic, geomet and diamond indicator
- Calculations: CIPW norms, exploration indices, hydrothermal alteration, molar and petrogenetic ratios, REE and regolith
- Spider normalisations: chondrites, crust, mantle, CRM standards
- Templates: aiSIRIS spectral data diagrams, graphs and mapped minerals
- Mineral, rock standards and OSNACA composition nodes.

## Drillhole Data Tools

- Single and multi-trace downhole plots
- 3D XYZ spatial plots and Glinking
- Wavelet Tessellation.
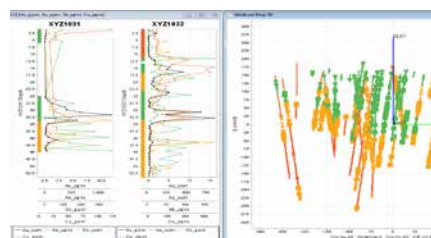


## Quantitative Techniques

- Principal components analysis
- Mahalanobis distance calculations
- Discriminant projection analysis
- Regression analysis
- Self organising maps
- K-means clustering
- Data levelling
- Tukey outlier identification
- Anomaly assessment tool
- Robust multivariate algorithms (inc. Fast MCD).

## Structural Data Tools

- Stereonets: orthographic, equal angle and equal area
- Plot planes and lines
- Calculate means, great circles (Bingham statistics), B axis and canonical best fit: "small circles"
- Point density contouring
- Rose plots
- Alpha/beta/gamma data conversion
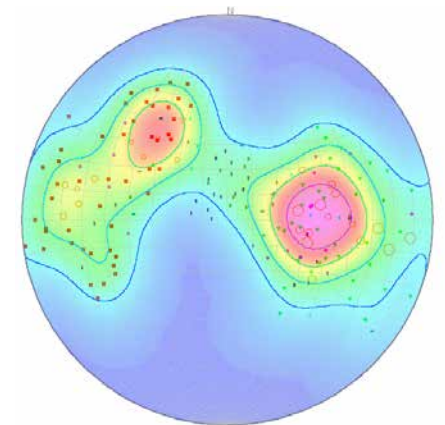


*Stereonet functionality within ioGAS™ software*