



POSITRON

ENERGY CONSULTING

ENERGY TRADING TOOLSET

Positron is an advanced set of risk assessment and risk management tools designed specifically for energy traders. Positron utilizes the most sophisticated modeling, analysis, and simulation methods available to help you understand your risks. This complete line of advanced tools augments and interfaces with any energy trading system on the market today to facilitate the accurate valuation and management of energy portfolios. Positron tools are written in C++ to give you outstanding real-time performance and position information. All tools are customized, implemented, and integrated specifically to meet your organization's trading, risk, and control policy needs.

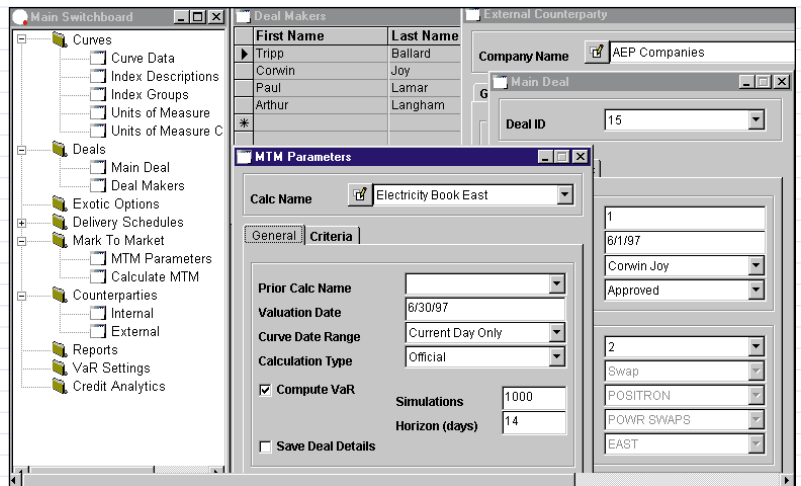
RATE SERVER ENGINE

Tools to manage and build price curves, including bootstrapping, interpolation algorithms, intra-day and intra-month pricing, peak/off-peak rates, settlement formulas and curve objects, to intelligently manage and control price information. The Positron Rate Server can be called from Microsoft® Excel™ or a variety of other high-end tools to get settlements, formulas, or real-time price information, and provides an excellent enterprise-wide way to manage price quotes throughout your business.

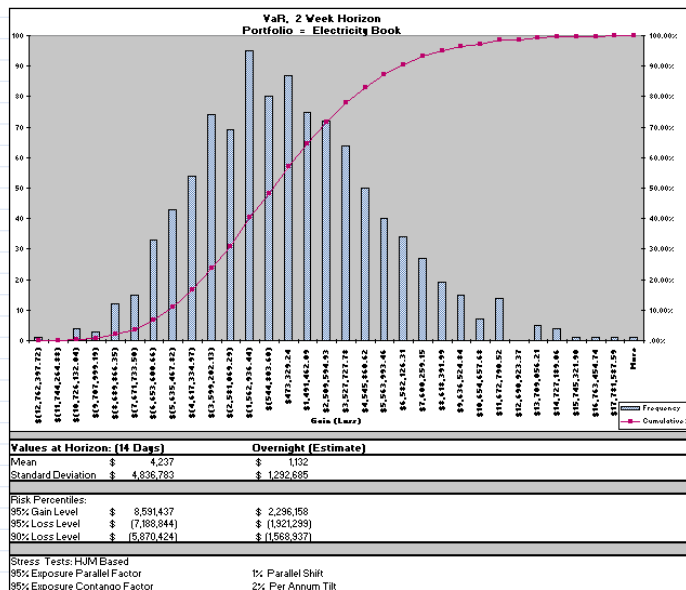
FLEXIBLE DEAL PORTFOLIOS

The ability to group deals by trader, region, counterparty or custom criteria on the fly. Inclusion/exclusion of deals and advanced "what-if" scenarios. This allows for powerful grouping and viewing of a company's traded books to get a clear understanding of risks across the company. Complete MTM values and detailed sensitivities such as delta, gamma, vega, eta, and rho are reported.

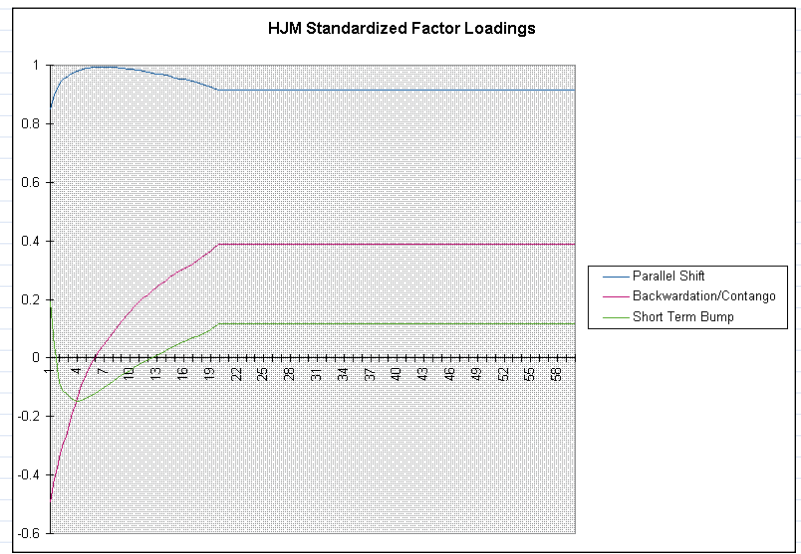
Widely recognized for its superiority over the RiskMetrics™ technique when valuing embedded options, Positron uses the HJM model as the best tool for calculating energy portfolio VaR. “What-if” analysis tools allow inclusion/exclusion of individual deals, curve shifts, volatility shifts, and interest rate risk. Automatic stress tests to check portfolio against likely scenarios. Price risk, basis risk, interest rate risk, volatility risk, correlation risk, cash-flow risk, and liquidity risk are represented.



Distribution of portfolio values under likely price changes. Positron is the only tool on the market whose VaR will correctly handle derivatives. Competing RiskMetrics-based approaches do not measure option risk.



HJM factor loadings represent risks due to parallel shift and contango/backwardation events explicitly.



ADVANCED VALUE AT RISK MODULE

Recognized for its superiority over the RiskMetrics technique when valuing embedded options, HJM simulation modeling is the best tool for calculating energy portfolio VaR. "What-if" analysis tools allowing inclusion/exclusion of individual deals, curve shifts, volatility shifts, and interest rate risk. Automatic stress tests to check portfolio against likely scenarios. Sophisticated HJM-based simulation model to simulate probable curve reshaping such as backwardation or contango. Price risk, basis risk, interest rate risk, volatility risk, correlation risk, cash-flow risk, and liquidity risk are represented. To do all this in real time, advanced low-discrepancy sequences are used to make complex risk assessments lightning fast.

CREDIT RISK MODULE

Advanced calculations to measure interaction of price and credit risk by deal and by counterparty. Ability to monitor portfolio and prevent credit rating meltdown. Charge/Credits for deals based on counterparty quality. Calculation of credit exposure profiles to help contain potential losses.

FINANCIAL POSITION REPORTING

Report net delta, gamma, vega, and rho positions either summarized by portfolio or broken out by deal. Show exchange traded hedge strips and backwardated roll graph of positions. Perform P&L breakdown to show gains and losses from previous day and how they can be attributed to individual risk categories.

OPTION PRICING TOOLS

Structured Products – these are the new breed of instruments which are taking over the marketplace. To compete, you cannot afford to be using obsolete tools. The Positron Energy Pricer is an easy-to-use Microsoft Excel Workbook with over a dozen popular energy option formulas.

The spreadsheets in this module are designed by energy professionals to help you seize the opportunities and manage the risks presented by structured products. Features include extensive online help, option sensitivities, and fast recalculation to let you quickly react to changing market conditions.

ADVANCED OLE ENGINE

All option pricing and portfolio analysis tools are exposed as COM automation objects. This means that you can access any of the portfolio or option tools online from within your favorite applications such as Microsoft Excel™, Microsoft Word™, Visual Basic™ or any of the hundreds of applications that support OLE automation. This also provides an easy and flexible way for users to create custom macros to perform special sensitivity or risk analyses.

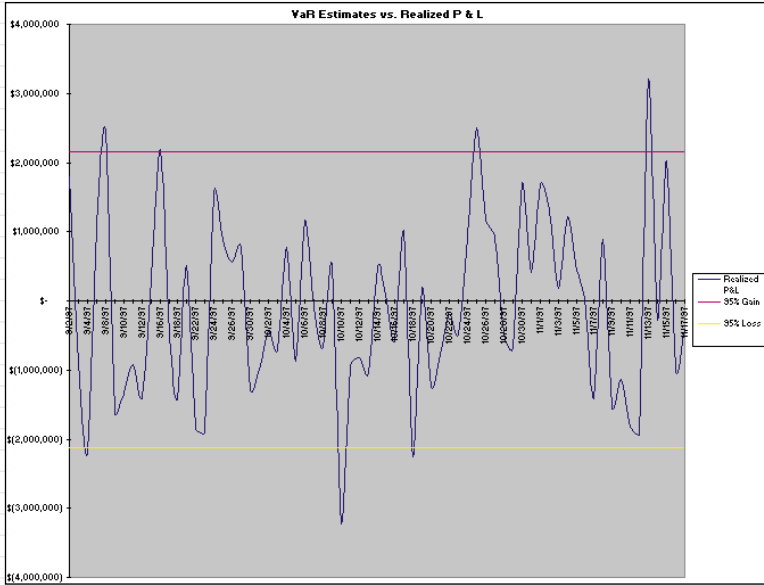
ANSI C OPTION LIBRARY

Comprehensive set of functions for all the standard exotics, including:

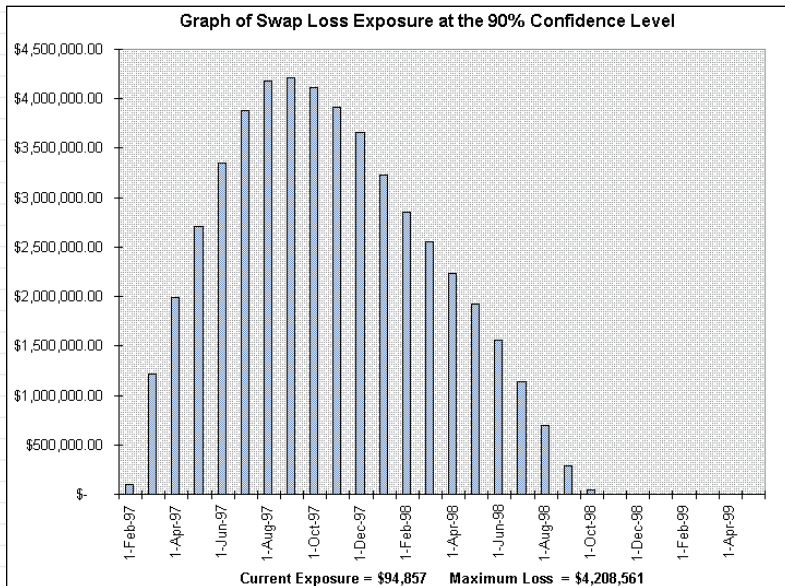
- Asians
- Americans
- Baskets
- Binaries
- Compounds
- Forward Start Options
- Spreads
- Swaptions
- Rainbows

Option Pricing Support Functions:

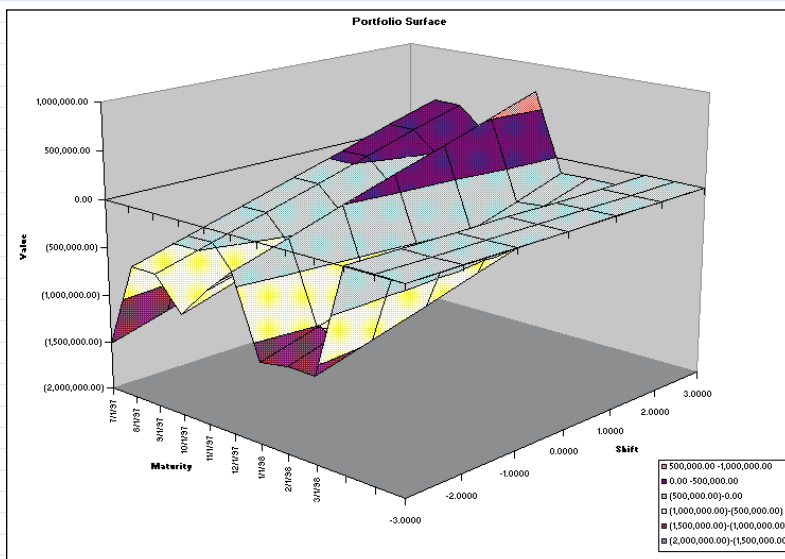
- Low-discrepancy sequences
- Bivariate and inverse normal
- Cholesky decomposition
- Numerical search algorithms
- Correlated deviates



Positron lets you track portfolio performance versus projected risks to help ensure that your portfolio is under control.

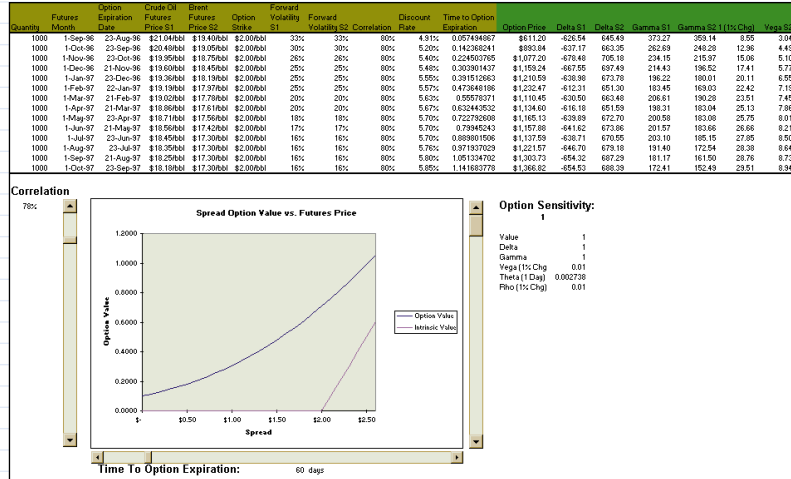


The ability to closely monitor and control credit risk is absolutely vital in today's rapidly deregulating marketplace. The graph shows credit exposure versus time for a typical swap. The bar on the far left represents the current marked-to-market exposure for the swap, which is what competing systems will report as "credit risk." In fact, the much larger bar in the center represents the credit risk of the swap when you account for the fact that energy prices can change and make the swap much more valuable. A key feature of the Positron system is that it has advanced calculation mechanisms to measure the interaction of price and credit risk by deal and by counterparty. This allows users to monitor their portfolio and prevent credit rating meltdown.



Positron has advanced tools to help you understand the behavior of your portfolio under a range of possible price movements. This lets you be proactive in your trading so that you can seize opportunities as they arise.

The Positron Energy Pricer is an easy-to-use Microsoft Excel Workbook with more than a dozen popular energy options.



OTHER TOOLS AVAILABLE

- **Deal Structuring**

Spreadsheets to help you structure and price common transactions such as swaps, swing swaps, swaptions, and OTC options.

- **Analytics**

Analytics to support pricing and hedging of potentially complex transactions.

- **Risk Management**

Real-time information about positions and sensitivities to enable traders to quickly react to changing market conditions.

- **Flexible-Deal Portfolios**

The ability to mark deals to market according to flexibly defined portfolios. This allows risk to be broken down at will by different categories such as region, commodity, trader, etc.

- **Physical/Financial Optimization**

The ability to leverage physical trading information to optimize paper transactions. This involves collecting detailed data across the physical network and combining that data with financial prices to realize additional arbitrage opportunities.

POSITRON SYSTEMS BACKGROUND

The Positron System was architected by Mr. Corwin Joy. Mr. Joy was the project lead for the development of a comprehensive value-at-risk system to measure the market risks at one of the largest energy trading companies in the world. Mr. Joy co-authored the breakthrough paper with Dr. Phelim Boyle and Ken Tan titled "Quasi-Monte Carlo Methods in Numerical Finance," *Journal of Management Science*, June 1996. Mr. Joy is also a frequent speaker at conferences such as *Risk Magazine's* "Practical Applications of Value-at-Risk and Stress Testing," 1995, and Cornell University's "Conference on Derivative Securities," April 1995.

ABOUT POSITRON

Founded in 1996, Positron specializes in providing advanced risk management services to energy marketers and utilities throughout North America. Our unparalleled expertise with risk analytics and component-object technologies lets us create real business value and educate our clients in cutting-edge trading practices. We also work with large systems integrators such as Per Se Technologies to provide full front-to-back integration of the Positron systems with all back-end corporate accounting, corporate credit, and physical trading systems.

For additional information about Positron products and services contact Corwin Joy at 713.529.4259.

CONSULTING SERVICES

Mr. Joy's consulting services are available on a variety of risk-related topics, including:

- Trading and Risk Management Strategies
- Trading Control Policies and Procedures
- Risk Profile Definition
- Risk Management Systems



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