LISE++ v18.1

Release announcement (highlights from v17 development)

This release consolidates the most impactful improvements from the v17 development cycle into the new official v18 package. The main motivation was to improve predictive power and reproducibility for rare-isotope production calculations (especially for AA/dBE work), while also modernizing workflows (UI, performance, reliability, signing/installer). Source: LISE changes page (section above "Official version 17") and the consolidated list: List of last v17 updates

Version / Date	Main development	Links
18.0.26 02/12/2026	• Reactions in Wedges • Corrections	details (PDF)
17.18.11 01/11/2026	• Fit / minimization infrastructure (dBE, AA) • Separator tuning on FOI via % ΔBρ/Bρ shift	details (PDF)
17.18.7 01/09/2026	• Recommended Abrasion-Fission settings	details (PDF)
17.18 01/04/2026	• Invariant-Mass Enforced (IME)-Holes excitation energy method	details (PDF)
17.17.53 12/28/2025	• dBE-systematics minimization	details (PDF)
17.17.29 11/30/2025	• AA-minimization: ○ - Cycling local line to overcome local minima ○ - Diagonal scaling (DSCL) in LM minimization • Convolution model corrections (high energy) • USER cross-section files from current model	details (PDF)
17.17.17 11/24/2025	• Apply recommended abrasion reaction settings • AA Minimization / Cross-Section Systematics • Fission Model Improvements (κ , N -width, curvature smoothing) • FRACS / SPACS / Reaction Models; Graphs / UI Enhancements • Data / Publications / Tables; Miscellaneous & Integration • ETACHA 4.8.8: Batch file, Update Summary	details (PDF)
17.15 08/20/2025	• Gauge optimized (progress updates throttled, ...) • MSVC Release build optimized, debug overhead removed • Windows 11E power-throttling disabled for consistent speed • LSODA: integrator (automatic Adams/BDF switching, ...) • Euler: integrator for quick, simple problems • Adams BDF: integrator available as standalone option for stiff problems.	details (PDF)
17.14 08/05/2025	• Beam Dump dialog: added Lock BD settings , improved statistics • 3D visualization: updated 3D-envelope and graph panels. • Excel integration: restored after Microsoft update (v.2504+) • Dark mode: added and refined in the Preferences dialogs	details (PDF)

	• Digital signing: executables, DLLs, Excel macros, and installer signed with MSU Sectigo certificate • Installer: moved to Actual Installer v10.3 • Setup dialog: multi-row drag-and-drop, erase, and satellite options (project by D.Kaloyanov) • General updates: new dBE defaults, faster file loading, wedge color fixes, updated icons/logos, improved dark-mode cancel dialogs.	
17.13.12 05/06/2025	• 3D-Envelope: Panel Development (project by A.Tarasova)	details (PDF)
17.13 04/08/2025	• Secondary target yields in MC; Momentum distribution characteristics plots; User CSs in Abrasion-Fission plots	details (PDF)
17.12 02/06/25	• 3D-items in envelope plots	details (PDF)
17.10 —	• LISE for Excel64	details (PDF)
17.09 11/10/2024	• Hybrid mode; dBE; Saveset read; ...	details (PDF)
17.08 09/08/2024	• Fission: Angular acceptance cut • Angular straggling vs. de-focusing	details (PDF)
17.07 07/10/2024	• Convolution model • FRIB logo • LDM3	details (PDF)
17.06 06/23/2024	• ARIS Beam Dump	details (PDF)
17.05 05/05/2024	• Secondary reaction products kinematics • Silent mode	details (PDF)
17.03 03/12/2024	• AA vs. Secondary Reactions • Plot distributions copy-paste	details (PDF)
17.02 02/26/2024	• Wedge position shift	details (PDF)

Significant improvements in this cycle: (1) more robust AA/dBE fitting & minimization infrastructure (including DSCL and cycling to avoid local minima), (2) new IME-Holes excitation-energy method and updated recommended settings for abrasion/fission, (3) modernized UI/features (PNG export, dark mode, file preview) and performance/stability work.

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