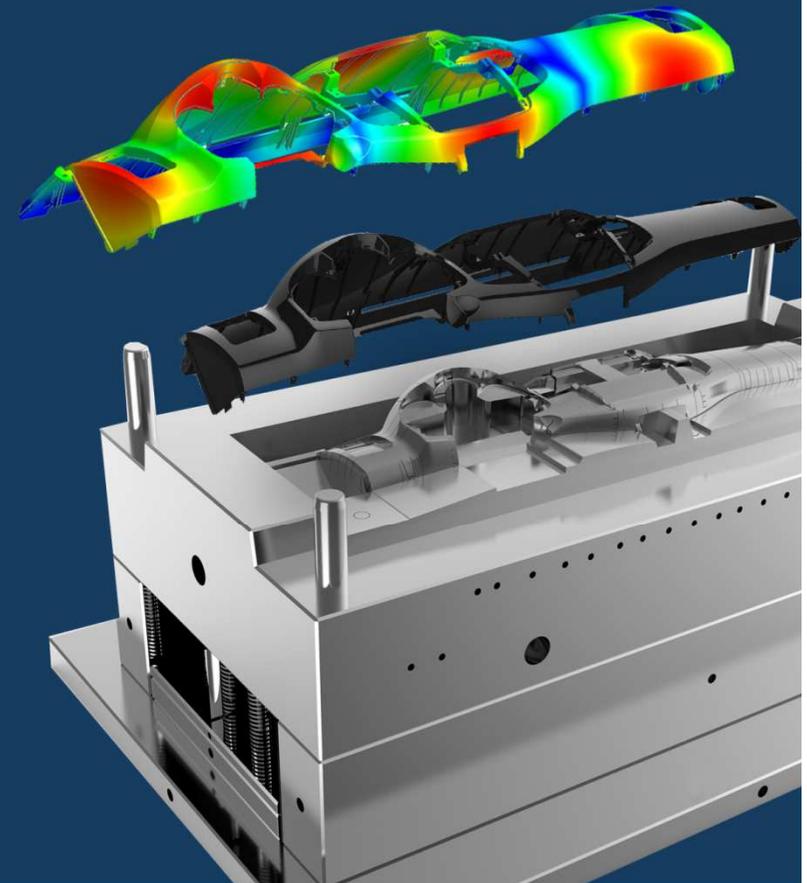


# Moldex3D

## Moldex3D R16 – STUDIO

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Moldex3D Italia



MID Molding Innovation Day 2018, Italy

14 June, 2018

Hotel dei Parchi del Garda, Lazise, Italy

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# Moldex3D R16 Studio Highlights

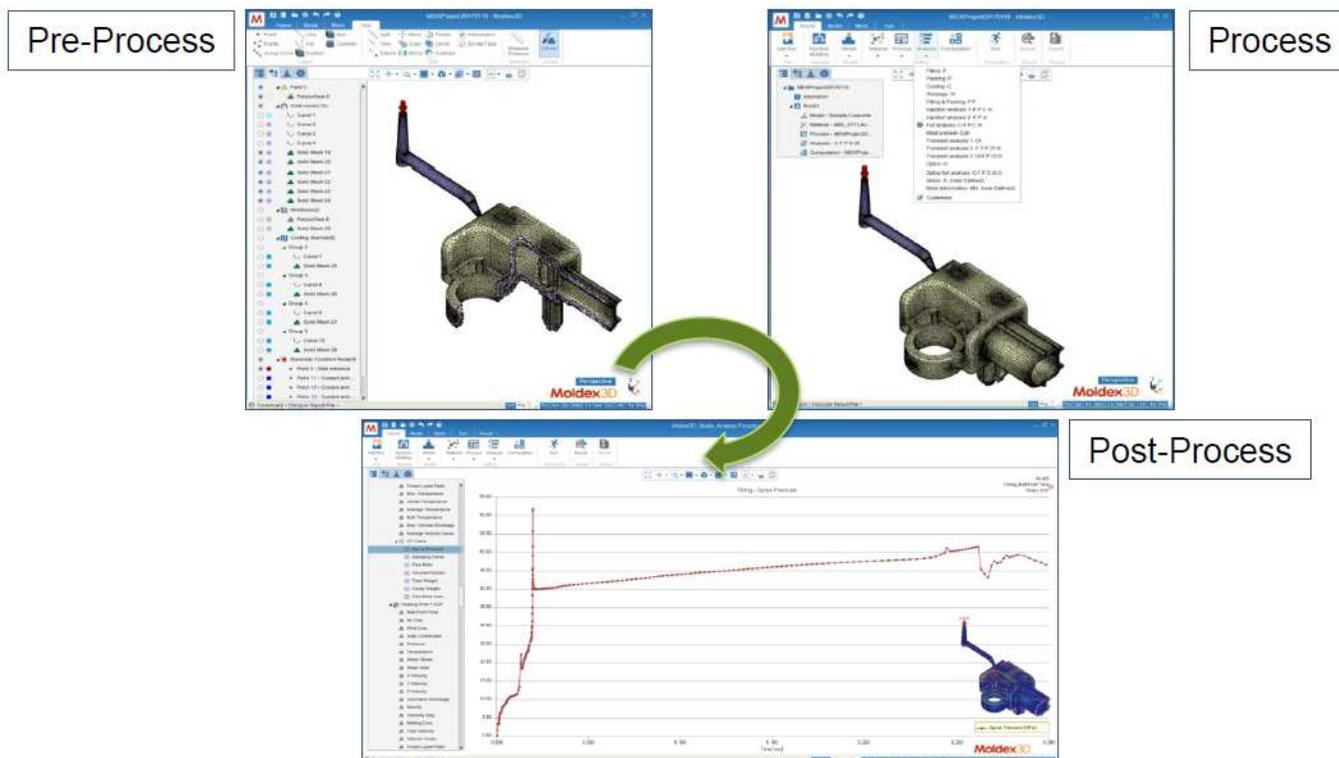
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- Introduzione a Moldex3D Studio
- Interfaccia di Moldex3D Studio
- Procedura di analisi in Moldex3D Studio
- Visualizzazione e Interpretazione dei risultati in Studio
- Live demo

# Introduzione a Moldex3D Studio

## Cos'è Moldex3D Studio?

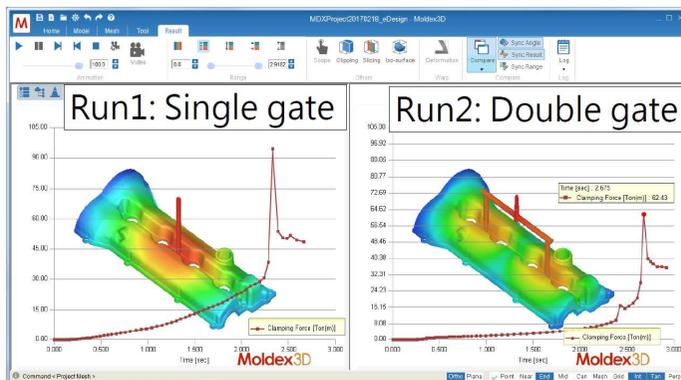
- L'integrazione di pre-processo, processo/simulazione e il post-processo in un unico ambiente
- Supporta sia la tecnologia di mesh di eDesign che la Solida



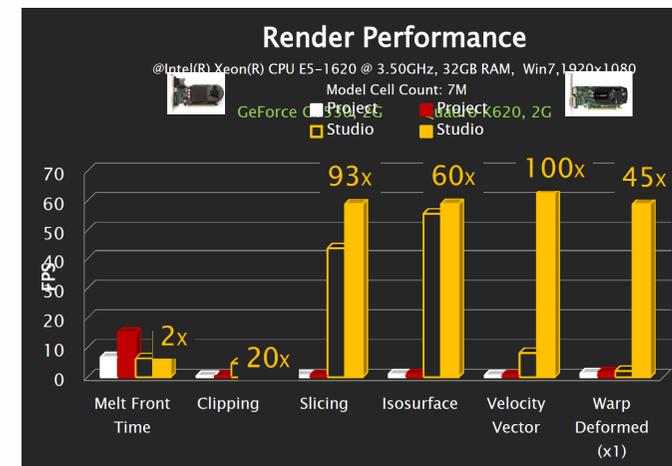
# Introduzione a Moldex3D Studio

## Perché Moldex3D Studio?

- Integrare tutti gli stadi delle analisi CAE in uno
- Promuovere minori clic per le operazioni
- Supportare il confronto dei risultati di run diversi
- Promuovere maggiori prestazioni di rendering
- Supporta gli hot-key per le operazioni



A Sample case	Click count	Time cost (min) (Skip solving)
Studio	33	3:41
Designer + Project	26+24 = 50	2:16+2:39



# Interfaccia di Moldex3D Studio

The screenshot shows the Moldex3D Studio interface with the following components labeled:

- Quick Access Toolbar:** Located at the top left, containing icons for Save, Undo, and Redo.
- File Toolbar Ribbon Menu:** The main menu bar at the top, including Home, Model, Mesh, Tool, Result, Display, and Utility.
- Project Title:** The window title bar text: "Moldex3D\_Studio - Moldex3D Studio".
- View/Graphic Toolbar:** A toolbar below the ribbon menu containing icons for viewing and selection.
- Tree Structure:** A panel on the left showing a hierarchical tree of the project, including folders for "Run01: Pin Gate", "Material-ABS\_STYLAC103\_1.mtr", "Process-Moldex3D\_Studio\_Run1\_1.pro", "Analysis-C F P C W", "Computation-Moldex3D\_Studio01.cmx", and "Result F P C W".
- Graphics Window:** The central area displaying a 3D model of a mold part with a red sprue, color-coded by filling time.
- Graphic Scale:** A scale bar at the bottom of the graphics window, ranging from 0.0 to 30.0 [mm].
- Snap Options Toolbar:** A toolbar at the bottom right with options like "orth", "plan", "point", "near", "end", "mid", "cen", "mes", "grid", "int", "tan", "perp".
- Info: Run Result Time Step:** A panel on the right showing "Run01 Filling\_Melt Front Time - EOF" and a color legend for time in seconds, ranging from 0.026 to 0.289.
- World Axis:** A 3D coordinate system (x, y, z) shown in the bottom right corner.
- Logo:** The Moldex3D logo is visible in the bottom right corner of the interface.
- History Window:** A panel at the bottom left showing the command "Command < Project Result Expansion >".

# Interfaccia di Moldex3D Studio

## Model Ribbon Menu



### Step 1 Import Model

-  1. Import Geometry
-  2. Check Geometry
-  3. Set Attribute
-  4. Observe Adviser

### Step 2 Build Runner System

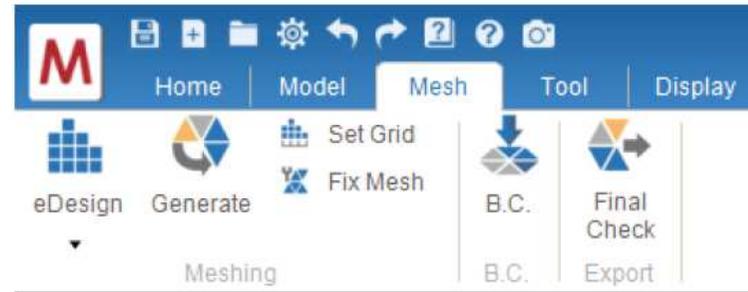
-  1. Gate
-  2. Runner
-  3. Melt Entrance

### Step 3 Build Cooling System

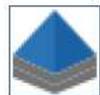
-  1. Moldbase
-  2. Cooling Channel
-  3. Inlet/Outlet
-  4. Check Cooling System

# Interfaccia di Moldex3D Studio

## Mesh Ribbon Menu



### Step 4 Generate Solid Mesh



1. Solid



2. Mesh Operation



3. Fix Mesh

### Step 4 Generate eDesign Mesh



1. eDesign



2. Mesh Operation



3. Fix Mesh

### Step 5 Export Mesh Model



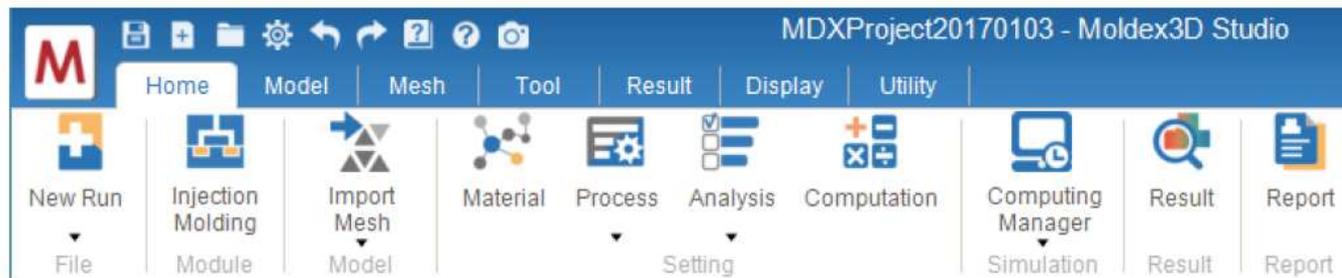
1. B.C.



2. Final Check

# Interfaccia di Moldex3D Studio

## Home Ribbon Menu



### Step 6 Set Analysis



1. Select Material



2. Set Molding Process



3. Specify Analysis Sequence



2. Set Computation Parameter

### Step 7 Run Simulation



1. Computing Manager

### Step 9 Report



1. PPT Report

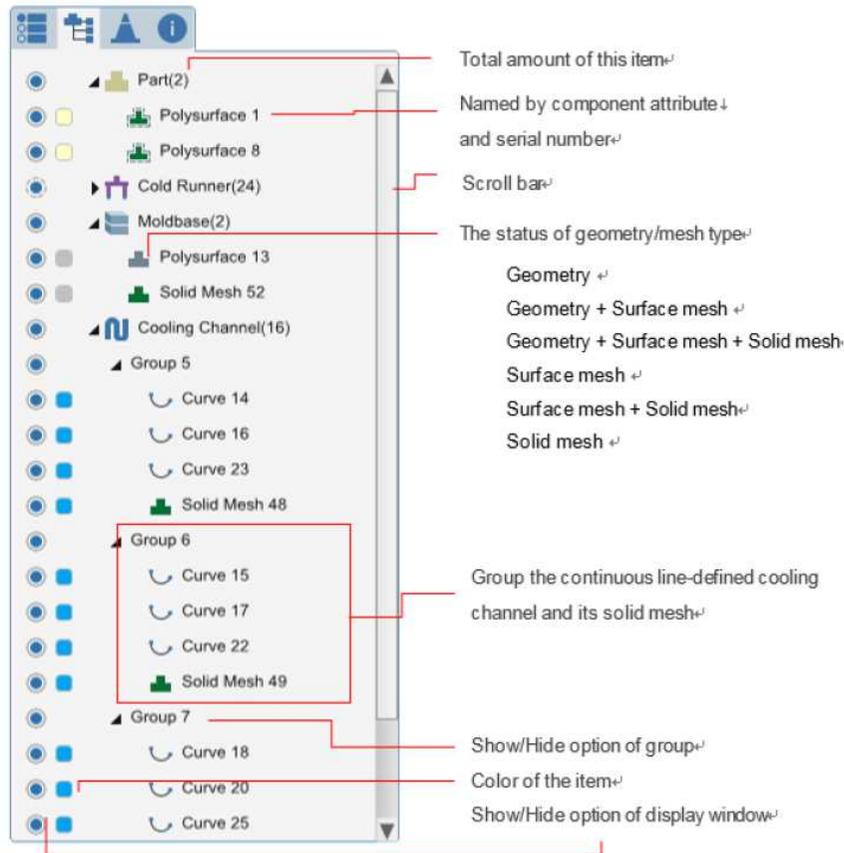
### Step 8 Analyze Result



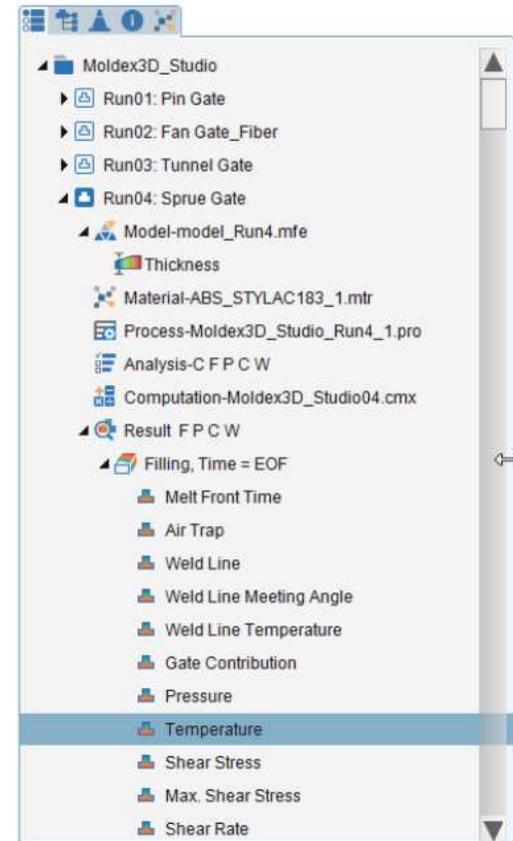
1. Analyze Result

# Interfaccia di Moldex3D Studio

## Albero del modello

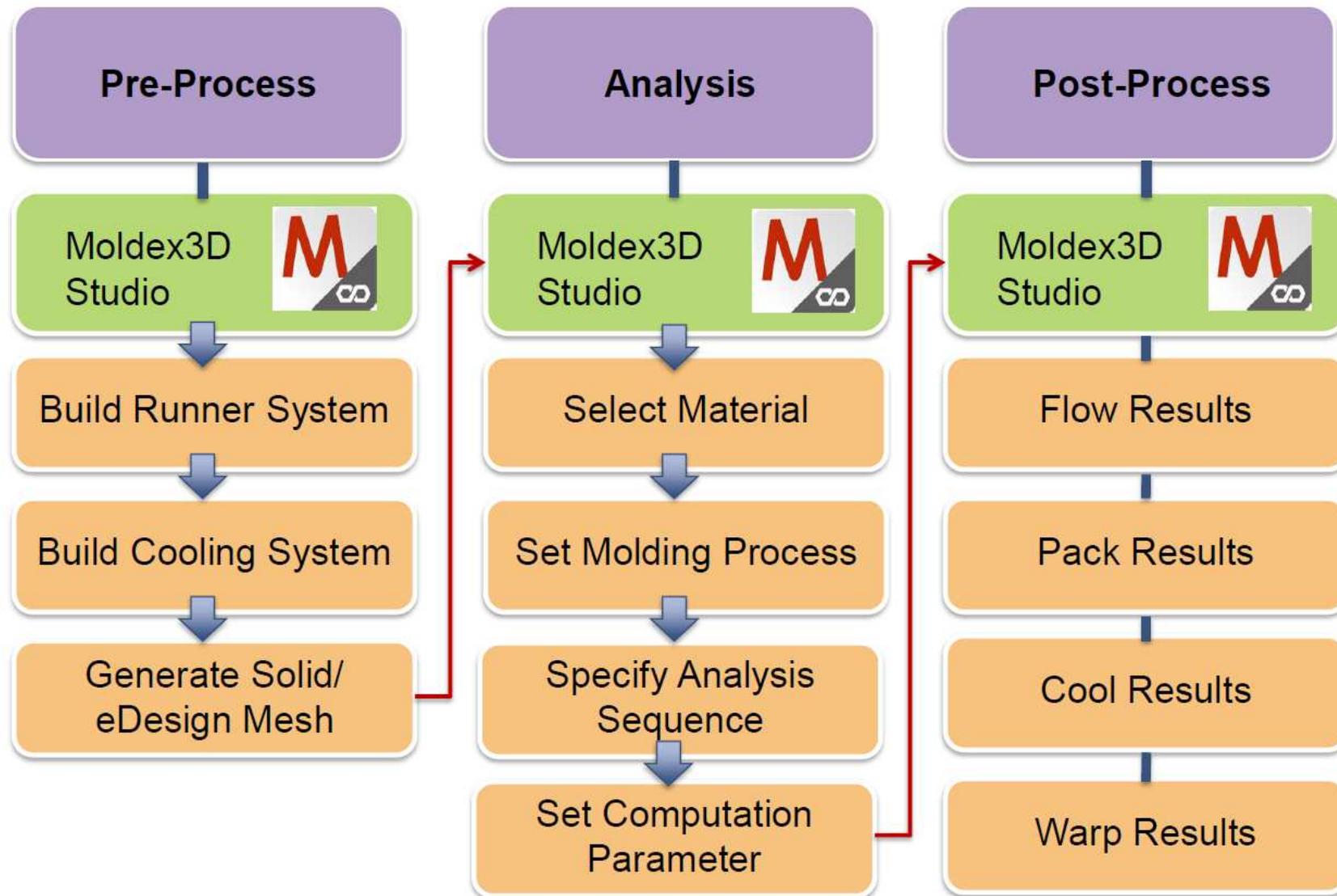


## Albero del progetto



Tutti i componenti nell'albero del modello sono raggruppati in base ai loro attributi sotto il relativo simbolo con il conteggio del numero di componenti

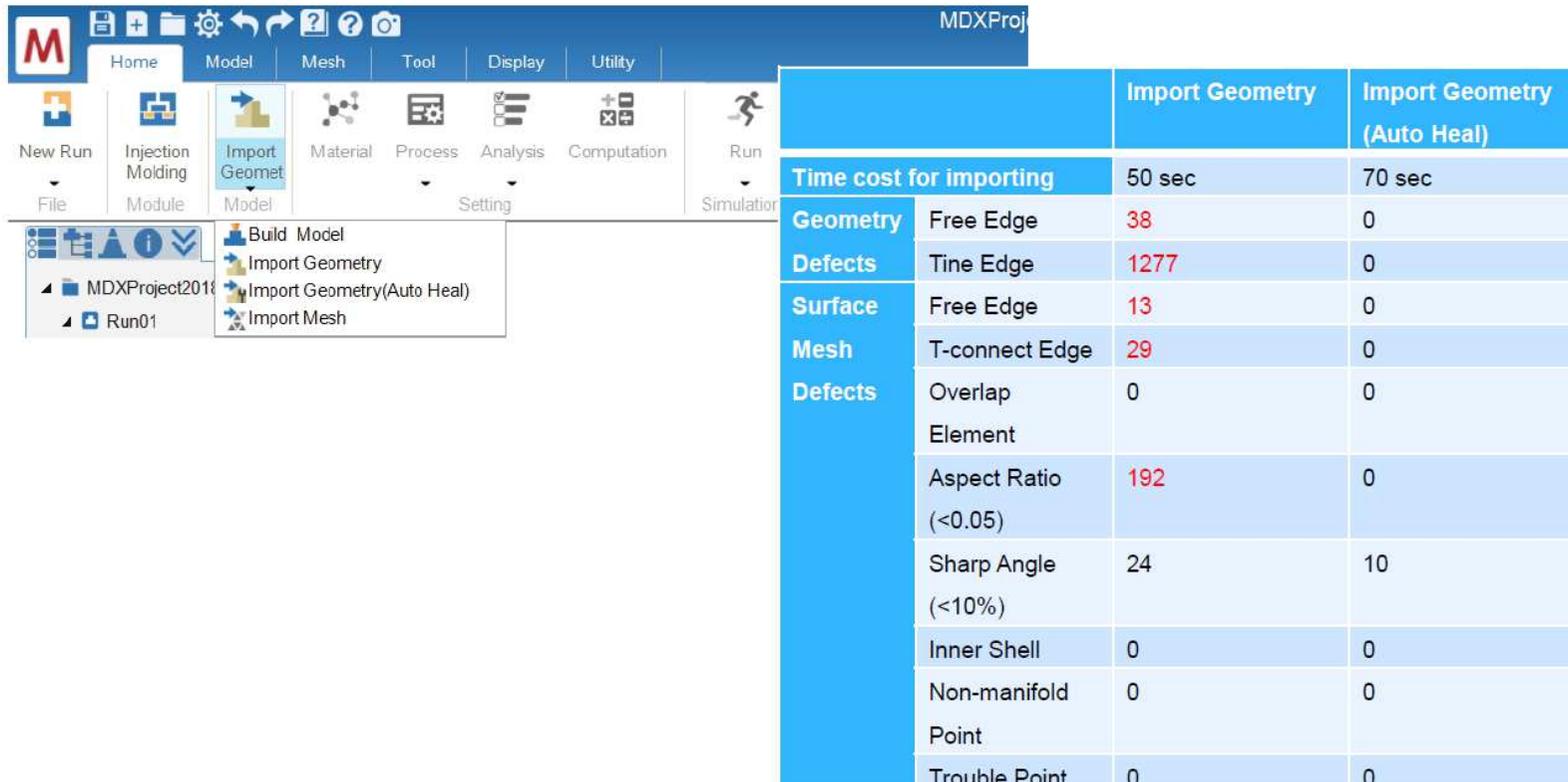
# Procedura di analisi in Moldex3D Studio



# Procedura di analisi in Moldex3D Studio

## Importazione della geometria (Auto Heal)

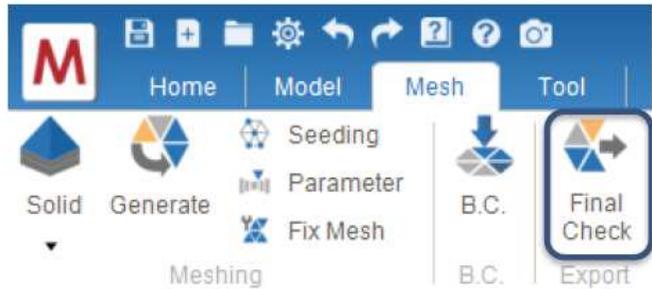
- La sistemazione automatica della geometria in fase di importazione ci permette di ridurre, nella fase successiva, lo sforzo per la riparazione manuale della mesh.



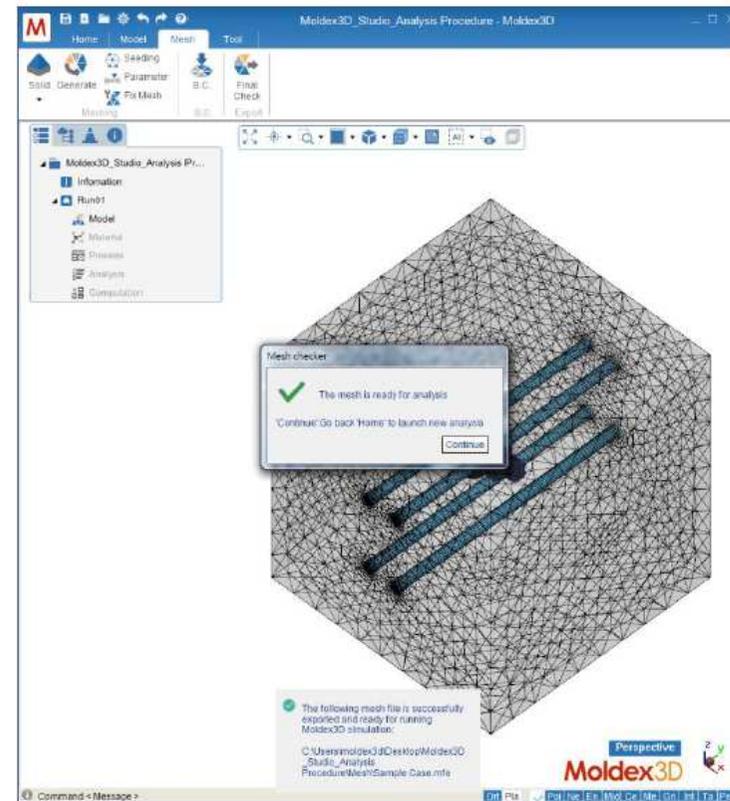
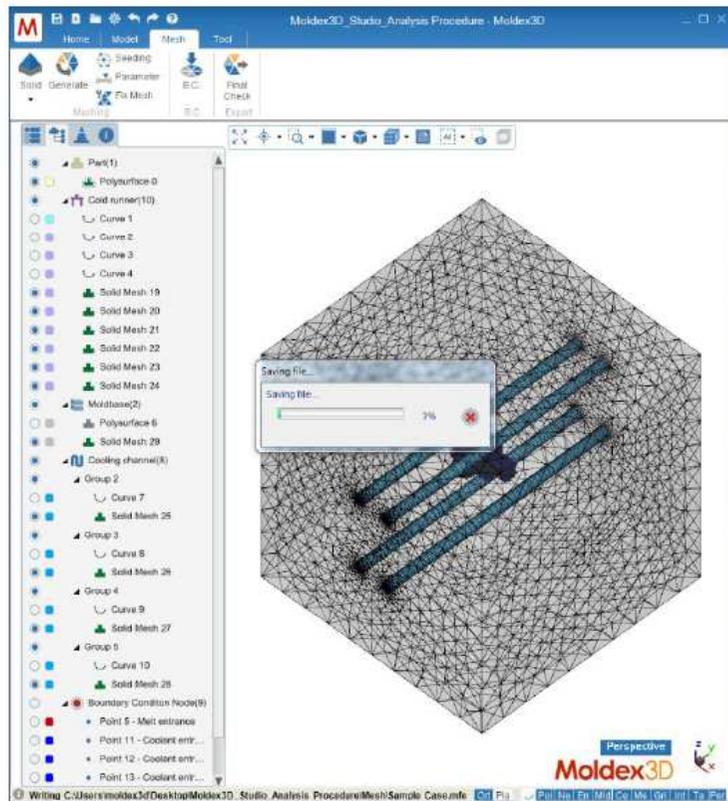
The screenshot shows the Moldex3D Studio interface with the 'Import Geometry' menu open. The menu options are: Build Model, Import Geometry, Import Geometry(Auto Heal), and Import Mesh. The 'Import Geometry(Auto Heal)' option is highlighted. To the right of the interface is a table comparing the results of the two import methods.

		Import Geometry	Import Geometry (Auto Heal)
<b>Time cost for importing</b>		50 sec	70 sec
<b>Geometry</b>	Free Edge	38	0
<b>Defects</b>	Tine Edge	1277	0
<b>Surface</b>	Free Edge	13	0
<b>Mesh</b>	T-connect Edge	29	0
<b>Defects</b>	Overlap Element	0	0
	Aspect Ratio (<0.05)	192	0
	Sharp Angle (<10%)	24	10
	Inner Shell	0	0
	Non-manifold Point	0	0
	Trouble Point	0	0

# Procedura di analisi in Moldex3D Studio



Con il Final Check il sistema salva ed esporta il modello. La mesh verrà salvata ed esportata in formato \*.mde o \*.mfe



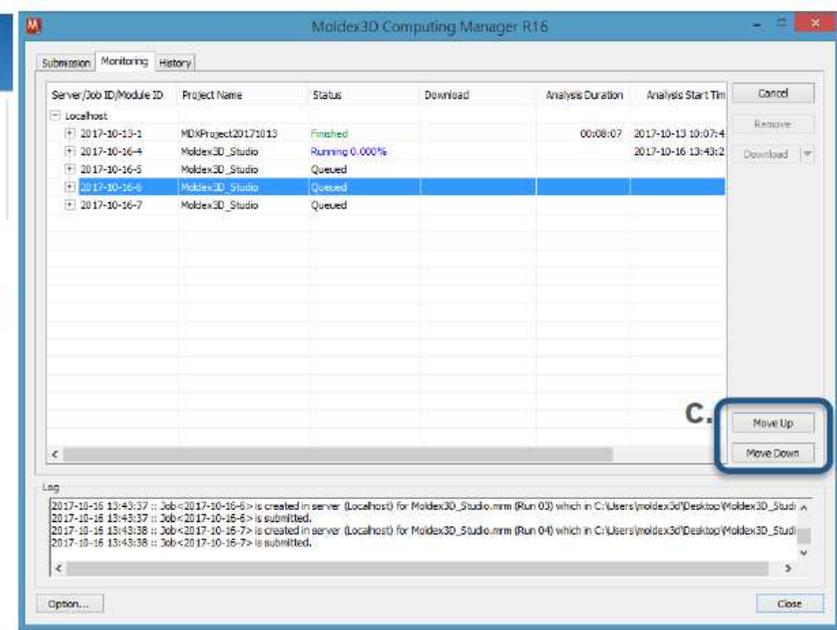
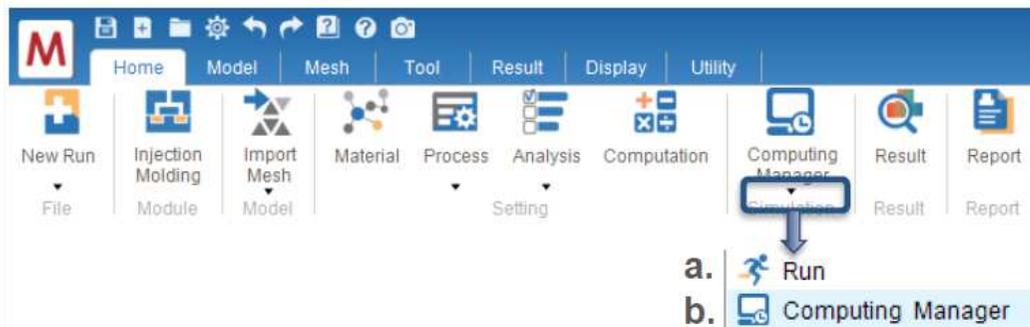
# Procedura di analisi in Moldex3D Studio

## Computing Manager

Il calcolo viene eseguito sempre in modalità Computing Manager.

Con il comando Run l'analisi viene eseguita direttamente con il numero di task massimo predefinito del sistema.

La lista di Run in calcolo può essere liberamente cambiata dall'utente finchè il Run non è in calcolo.



# Visualizzazione e Interpretazione dei risultati in Studio

## – Animation

Play	Pause	Forward	Backward	Stop	Setting	Video
						

## – Color Legend

Banded distribution	Show/hide color legend	Inverse legend color	Fill out-of-range	Reset display range
				

## – Inspection

Probe	Clipping	Slicing	Iso-Surface
			

## – XY Plot



### • History

## – Warp



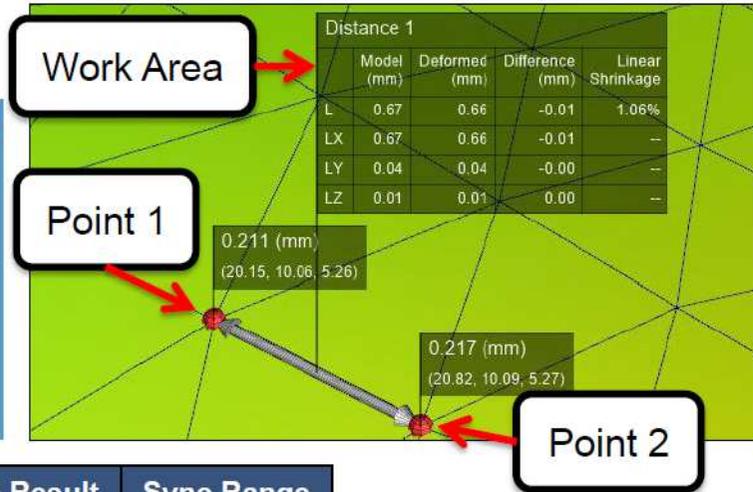
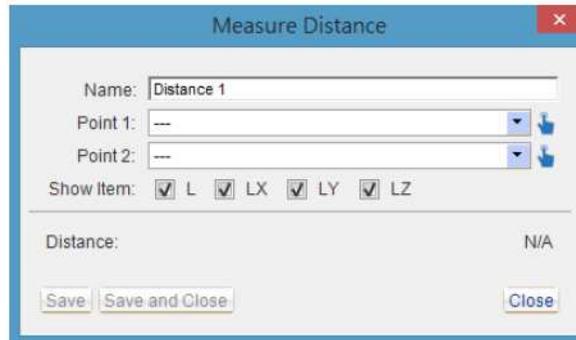
### • Deformation

- Scale size : 1 (Default)
- Scale range : 1~100 (Only support integers)

# Visualizzazione e Interpretazione dei risultati in Studio



– Measure Distance



– Compare



• 2 windows



• 4 windows

Sync Angle	Sync Result	Sync Range



– Log

Mesh	Filling	Packing	Cooling	Warpage



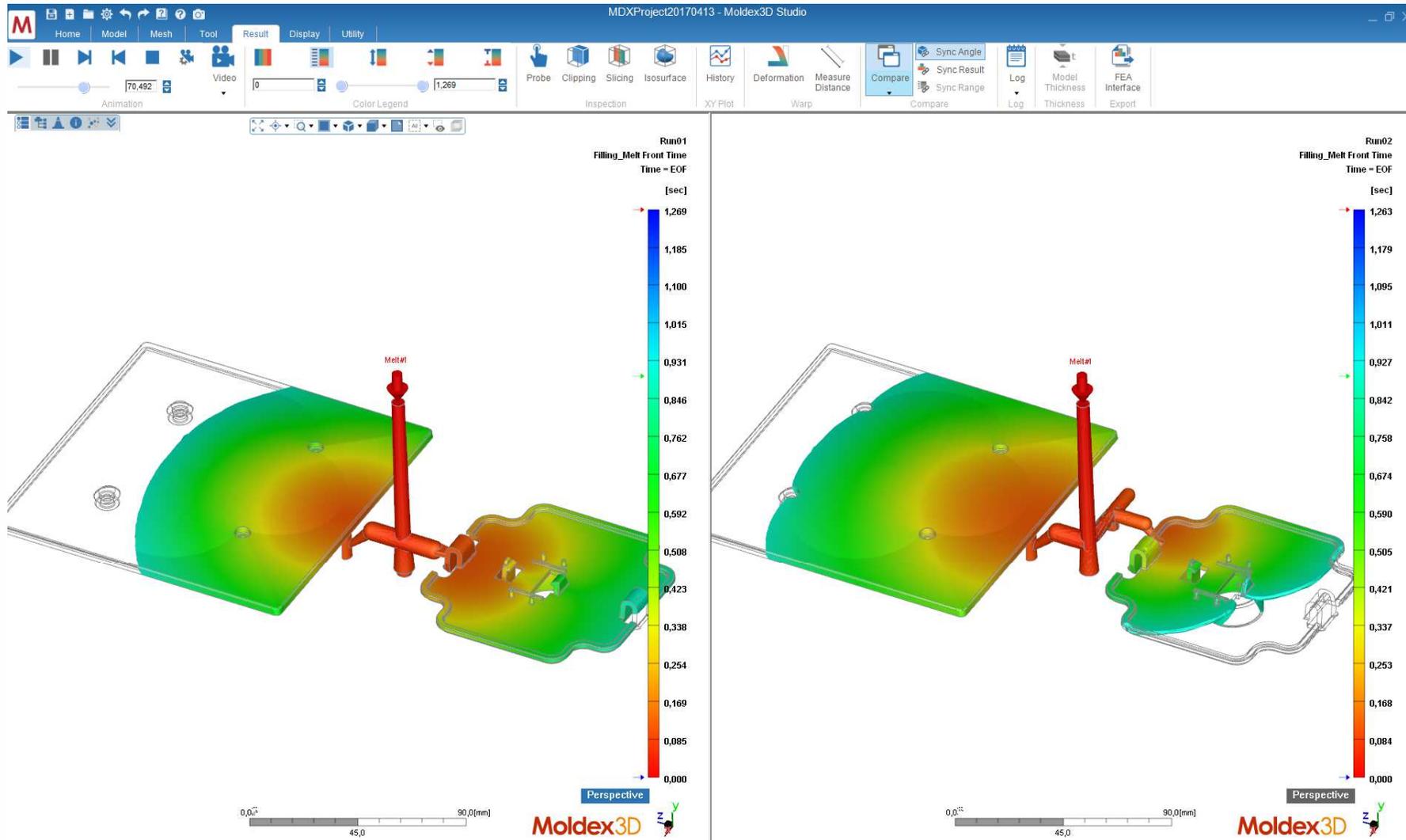
– Model Thickness

– Export



• FEA interface

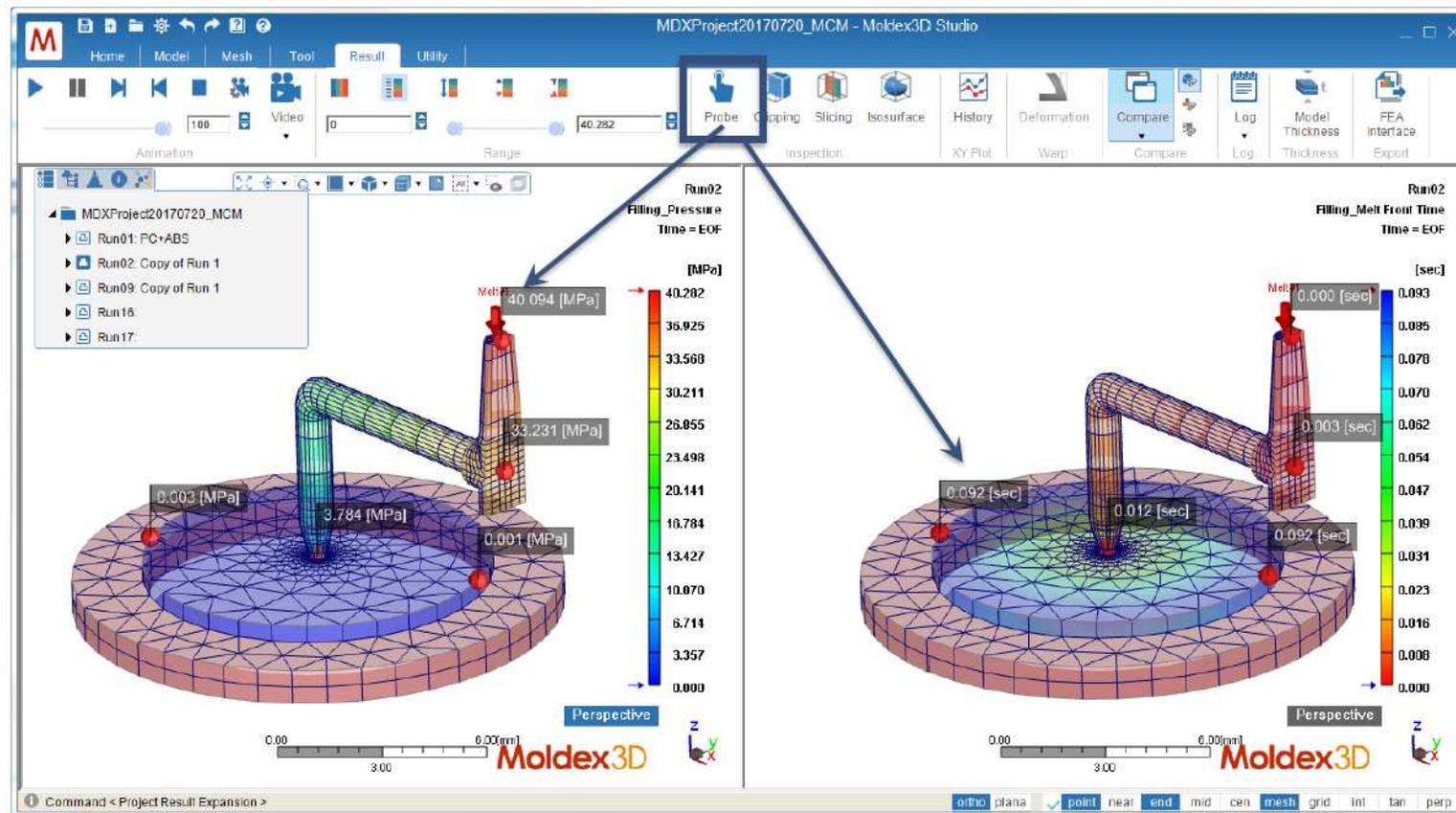
# Visualizzazione e Interpretazione dei risultati in Studio



# Visualizzazione e Interpretazione dei risultati in Studio

## Probe

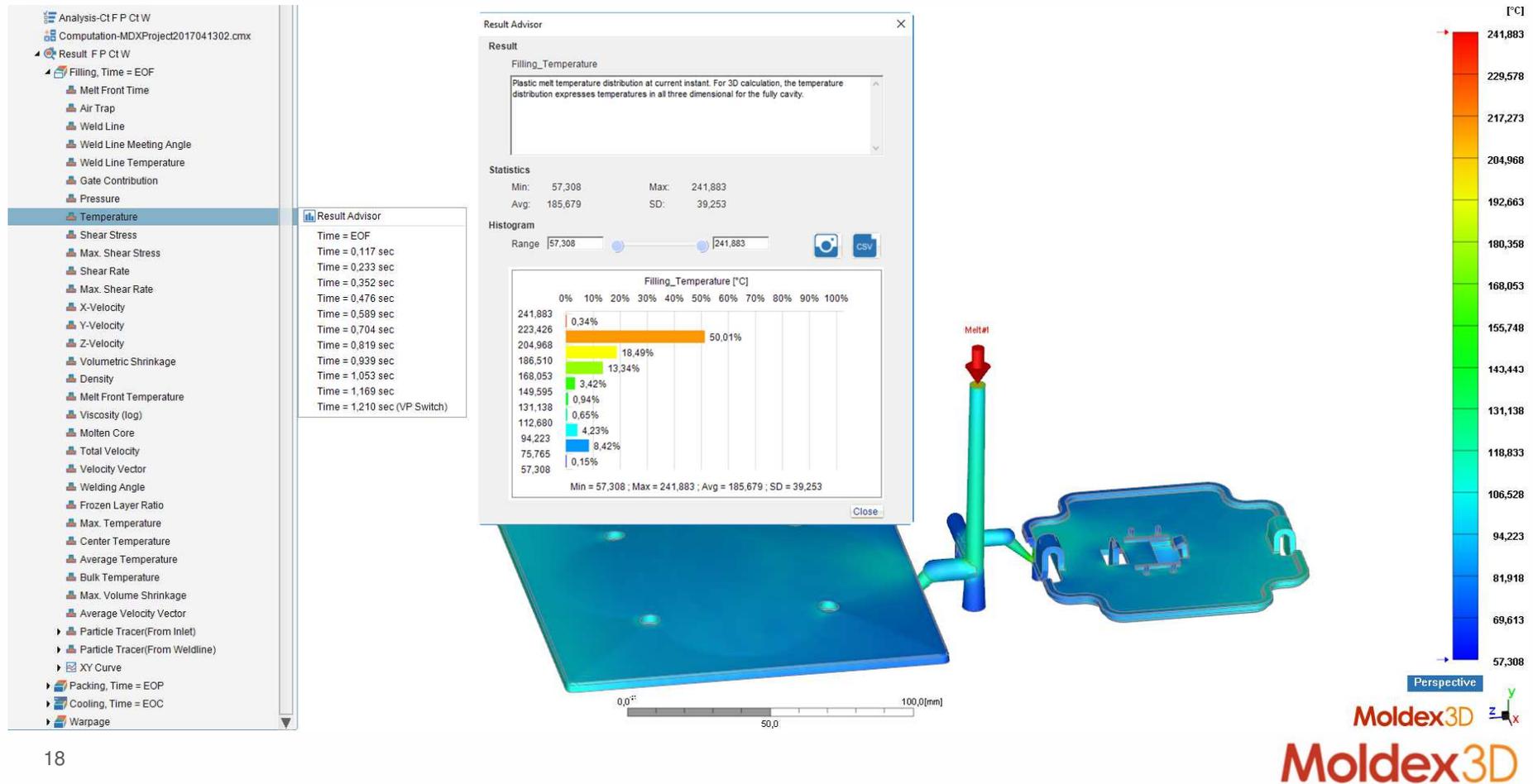
- Nuovo strumento, facile e veloce per ispezionare ovunque i risultati selezionando i punti sul modello. Il valore viene aggiornato automaticamente quando la voce di risultato viene modificata.



# Visualizzazione e Interpretazione dei risultati in Studio

## Result Advisor

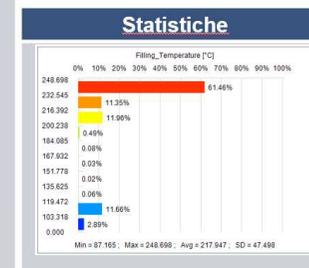
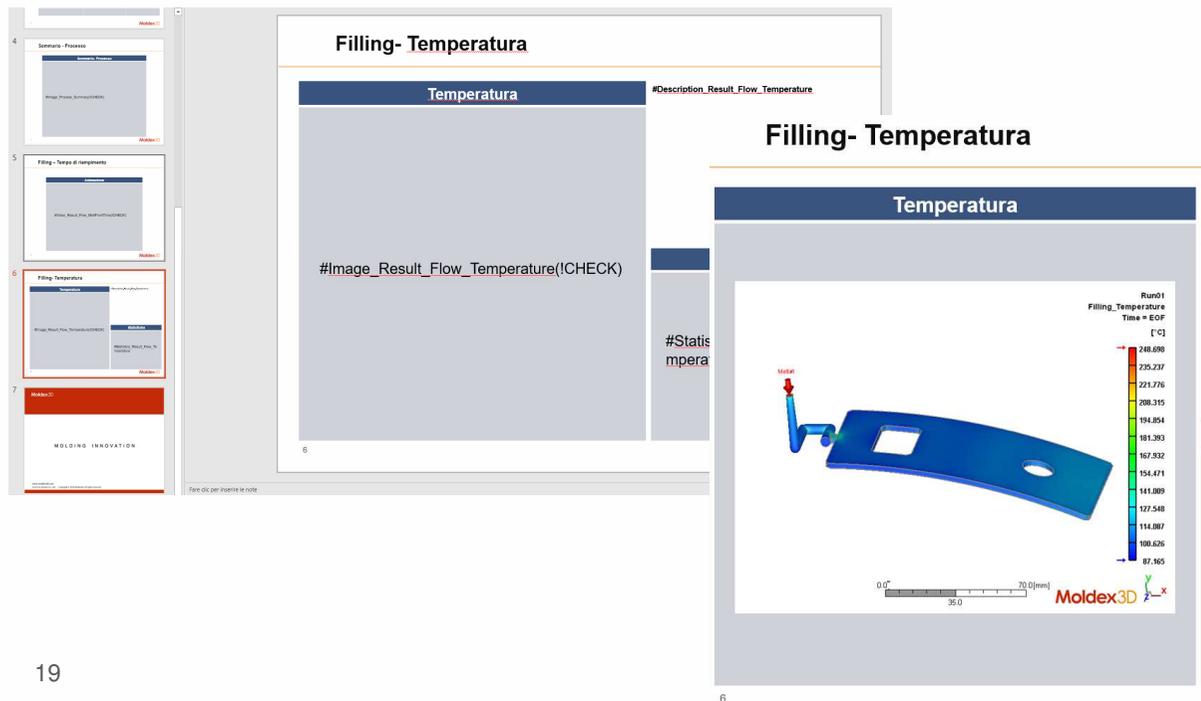
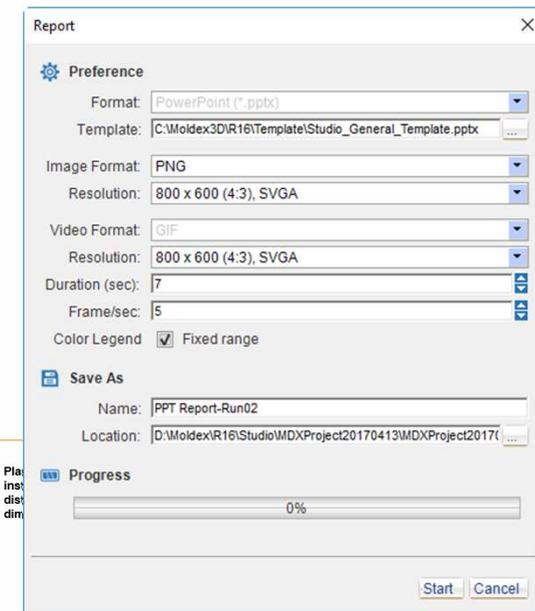
- Doppio clic sulla voce di risultato o tasto destro per ottenere le statistiche e l'istogramma.



# Visualizzazione e Interpretazione dei risultati in Studio

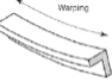
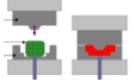
## Report personalizzato

- Si possono creare report personalizzati usando un template predefinito in PPT che contiene i tag Moldex3D ma con le personalizzazioni utente



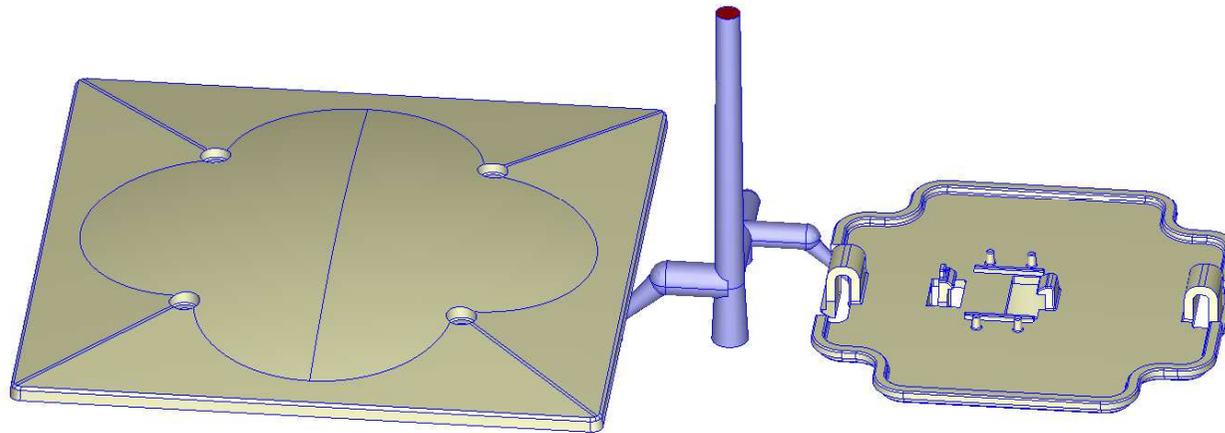
# L'interfaccia Moldex 3D Studio è pronta?

## User Satisfaction

Scenarios		
 <b>Molding Simulation and Defect Prediction</b> (FPCW simulation / Gate Location Advisor/ Quick Flow / Part Designer)		
 <b>Insert Molding</b> (MCM/ Link Previous shot )		
 <b>Output</b> (Video/Report ) (PDF/HTML)		
 <b>Warpage Deformation Prediction</b> (Measure linear shrinkage/Warpage scale) (Export Deformed STL / Shrinkage Compensation/ Anchor Plane/ Roundness)		
 <b>Stress Analysis</b> (Stress / Core-shift / mold deformation )		
 <b>Advanced CAE User</b> (DOE / Venting / Iso-contour)		
 <b>Special molding process</b> (CM/ICM/WAIM/FAIM/PIM/MIM.... )		

# Live demo

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Moldex3D 

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