



PAS – Global Analysis or Local Analysis?

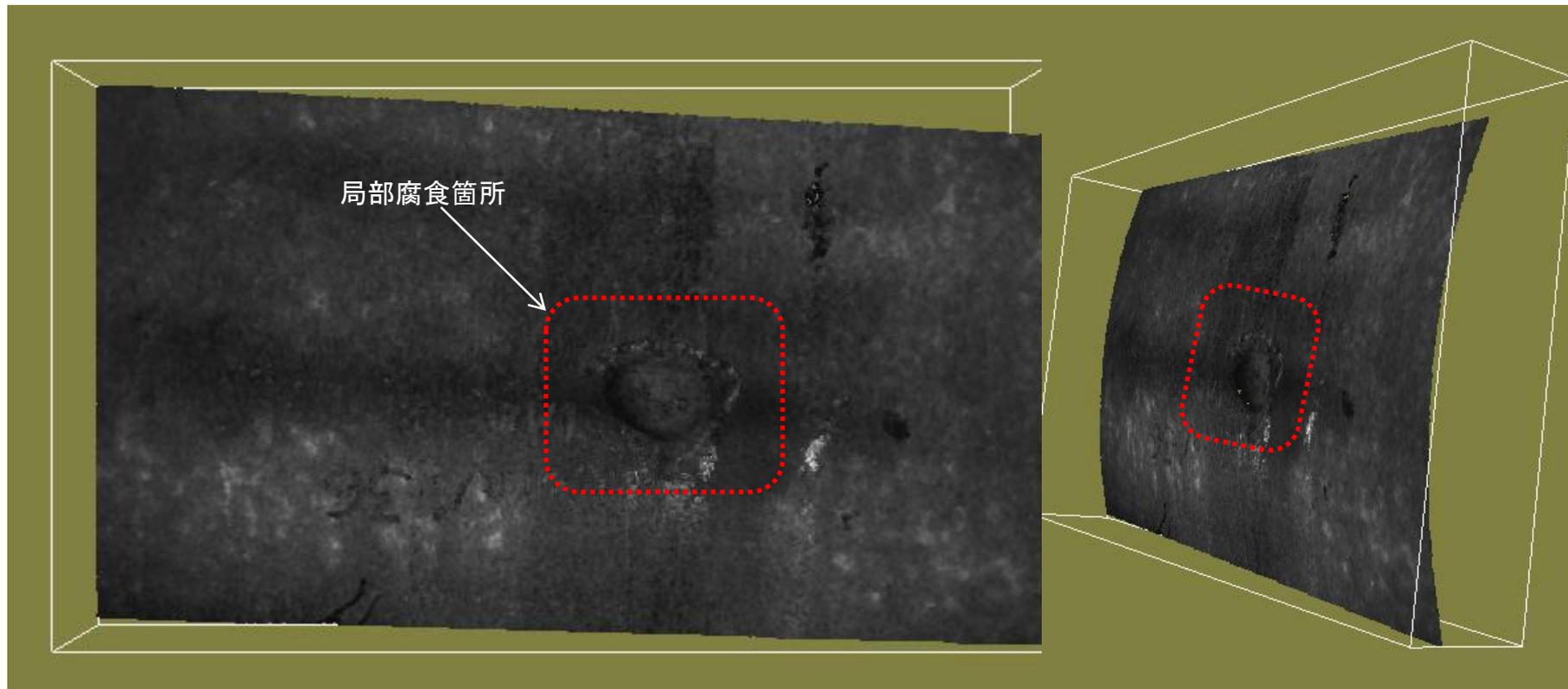
Application Note 4

株式会社セイコーウェーブ

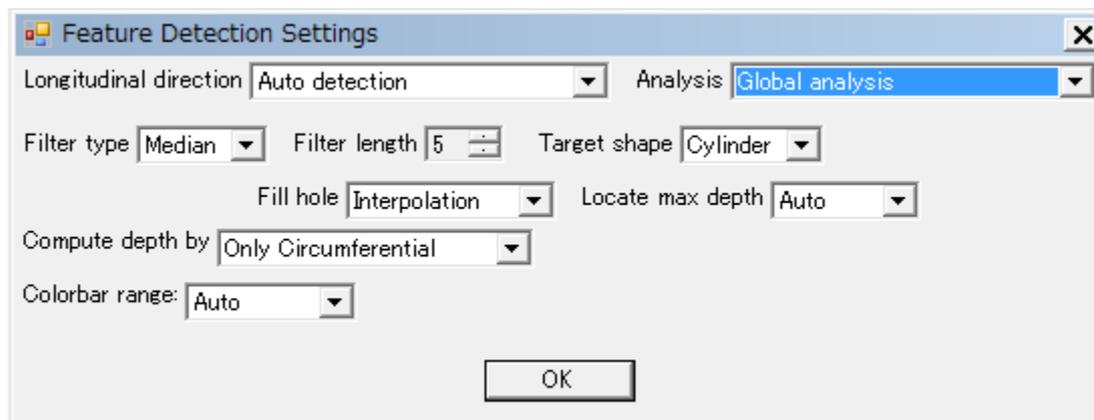
使い分け原則

- Global analysis mode はほぼすべてに適用可能
 - General corrosion (広域腐食)
 - Local corrosion (局部腐食)
 - 健全部と腐食部の境界がはっきりしているもの
 - 或いは、健全部の面積が広いもの
 - Dent (機械的損傷)
- Local analysis mode の適用対象は限定的
 - Local corrosion (局部腐食)
 - 変形部内部の局部腐食
 - エルボ一部分の局部腐食など
- PAS では、以下の設定がデフォルトとなっている
 - Global analysis mode
 - Cylinder

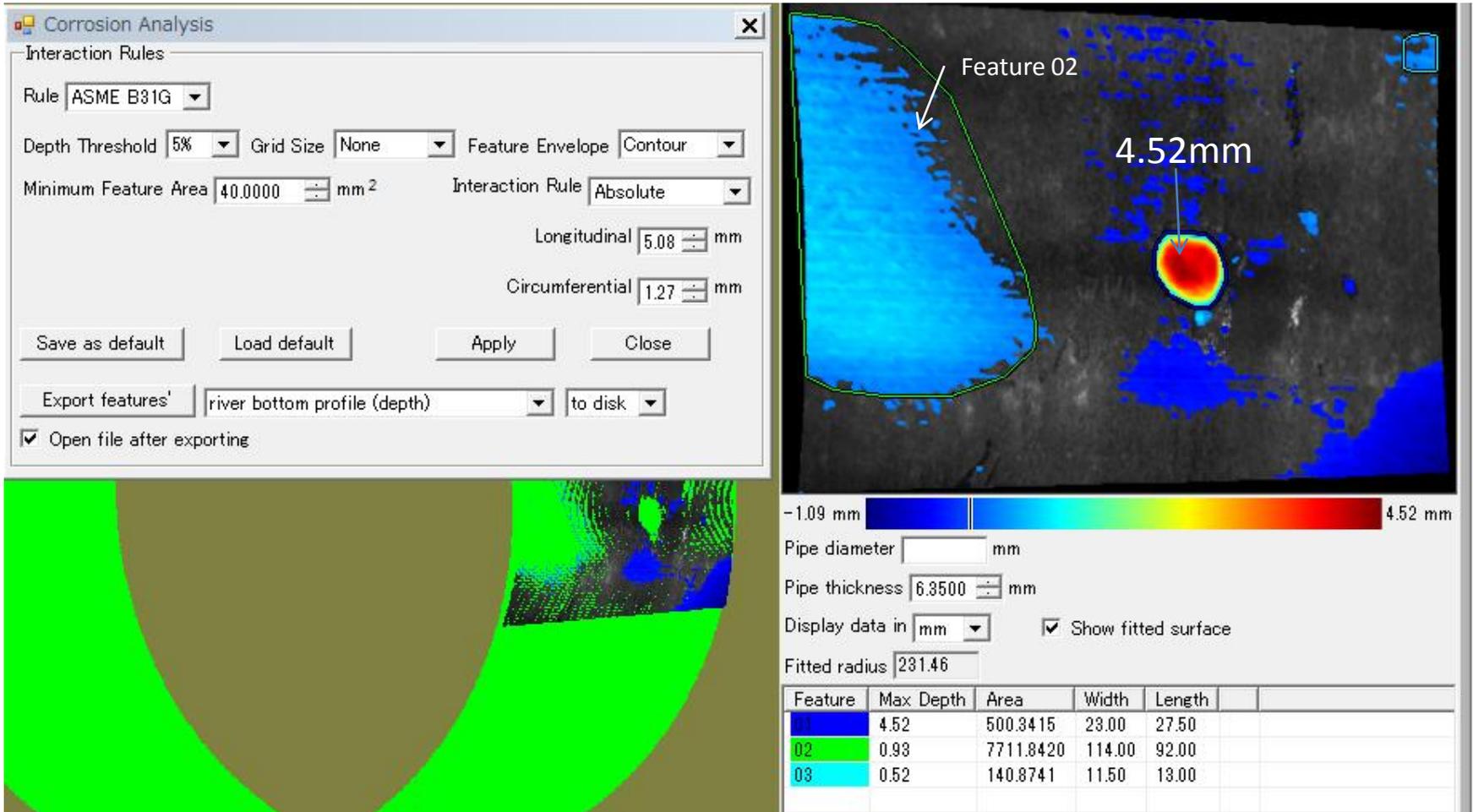
局部腐食配管事例1



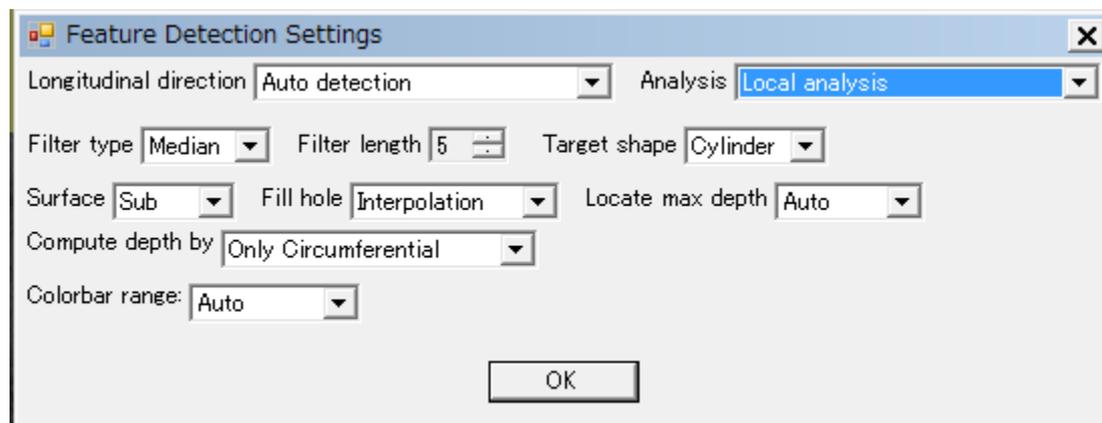
Global analysis modeの設定



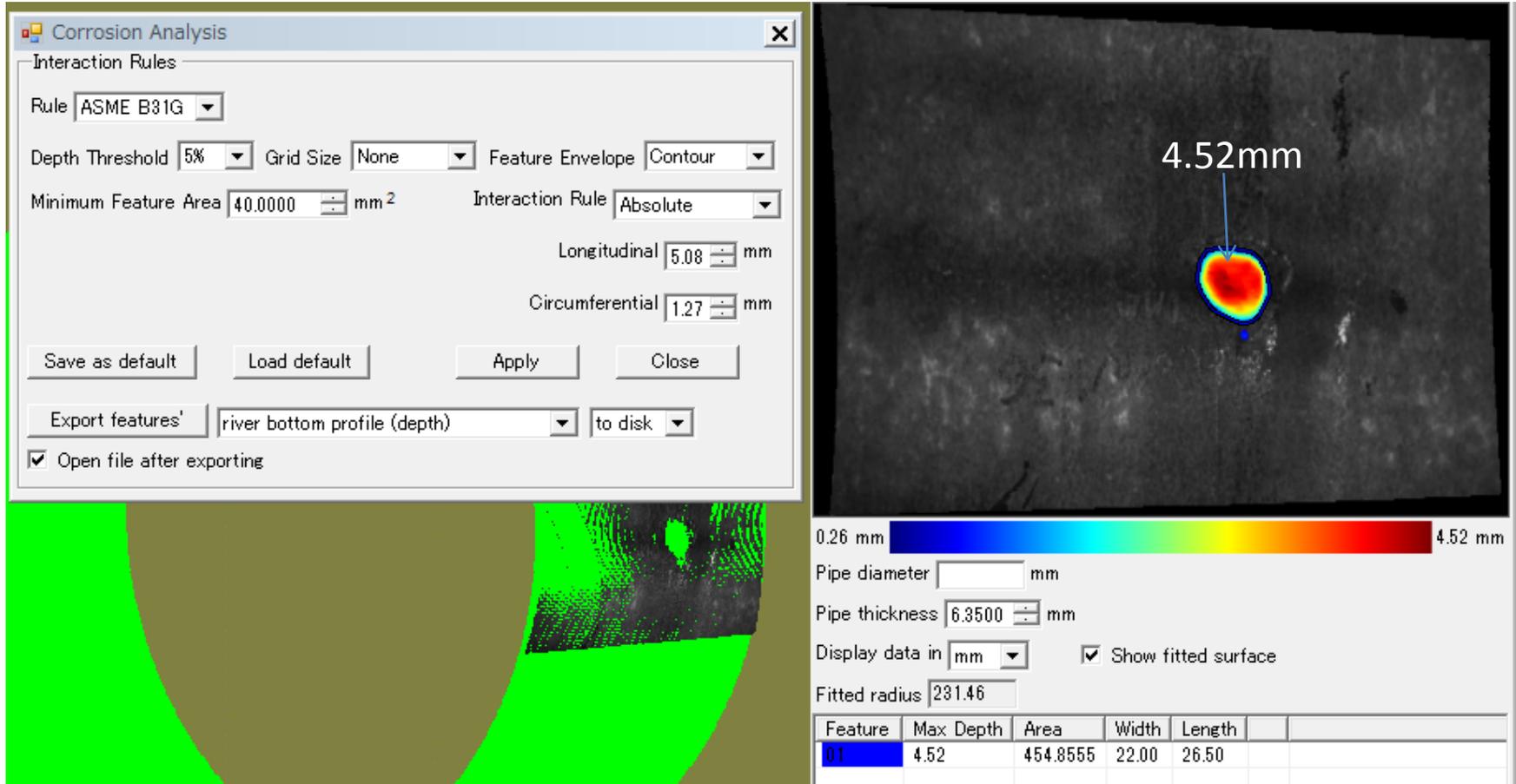
腐食箇所抽出



Local analysis mode の設定



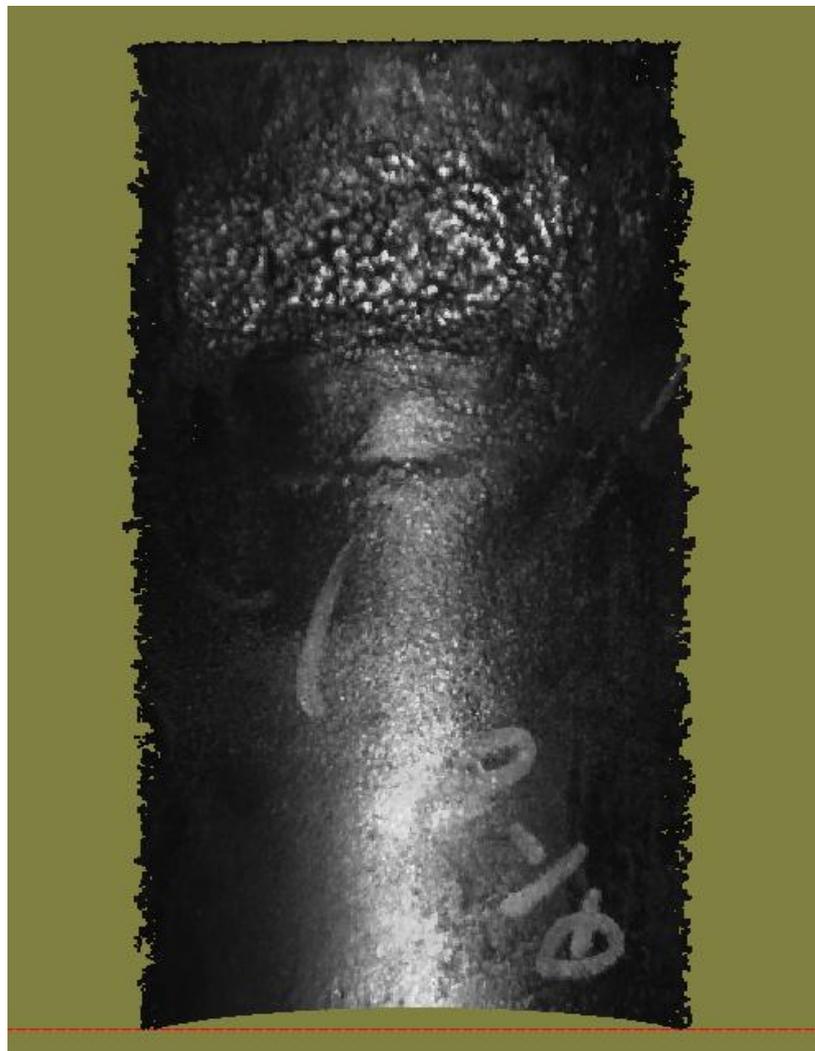
腐食箇所抽出



Local mode と Global mode の相違

- 局部腐食に対して
 - どちらも同じ箇所を、同じ深さとして検出する
- 広範囲でなだらかな腐食領域に対する検出の違い
 - Local analysis mode → 無視する
 - Global analysis mode → Fitted surface (再現された基準円筒)との違いに基づき、検出する (スライド5のFeature 02)

広域腐食配管事例1



Global mode 解析結果

Corrosion Analysis

Interaction Rules

Rule: ASME B31G

Depth Threshold: 5% Grid Size: None Feature Envelope: Contour

Minimum Feature Area: 40.0000 mm² Interaction Rule: Absolute

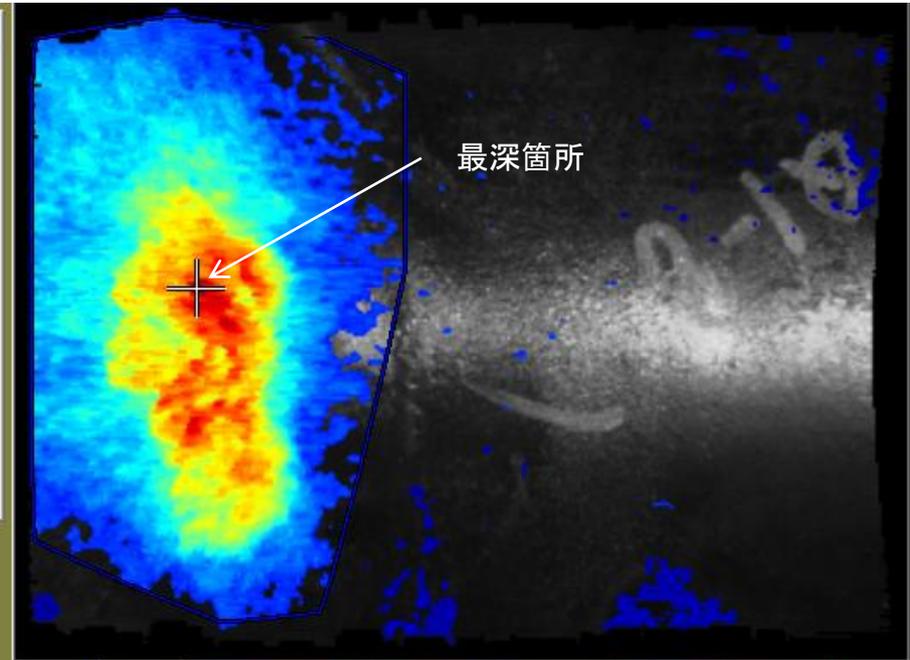
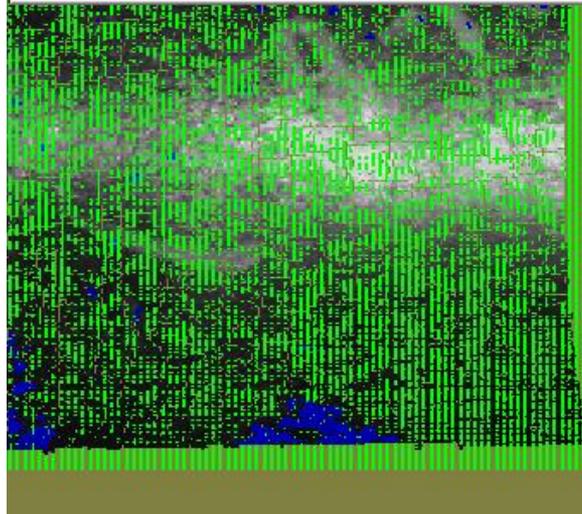
Longitudinal: 5.08 mm

Circumferential: 1.27 mm

Buttons: Save as default, Load default, Apply, Close

Export features: river bottom profile (depth) to disk

Open file after exporting



Pipe diameter: mm

Pipe thickness: 6.3500 mm

Display data in: mm Show fitted surface

Fitted radius: 44.65

Feature	Max Depth	Area	Width	Length
1	4.88	5871.4330	106.00	63.50

Local mode 解析結果

Corrosion Analysis

Interaction Rules

Rule: ASME B31G

Depth Threshold: 5% Grid Size: None Feature Envelope: Contour

Minimum Feature Area: 40.0000 mm² Interaction Rule: Absolute

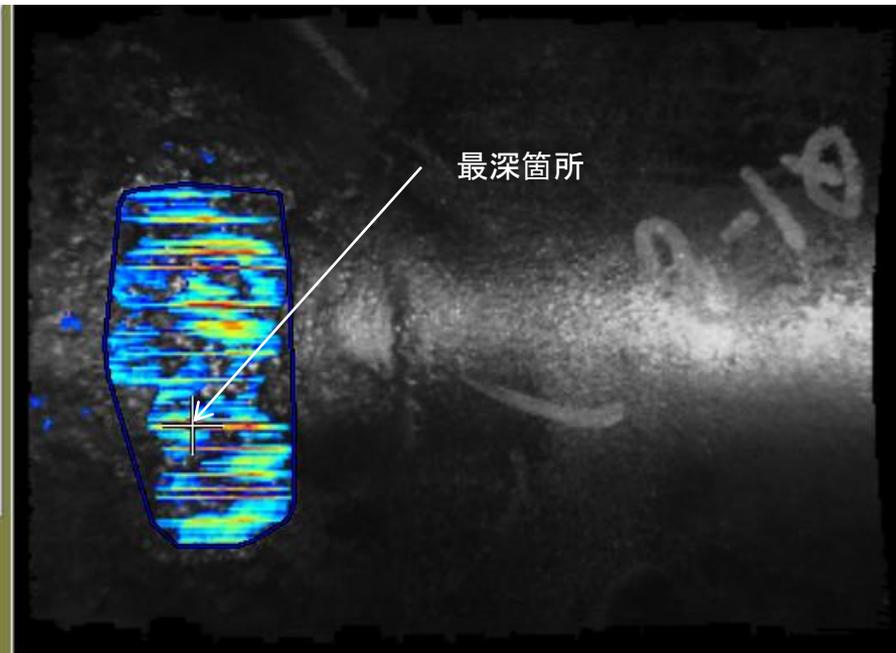
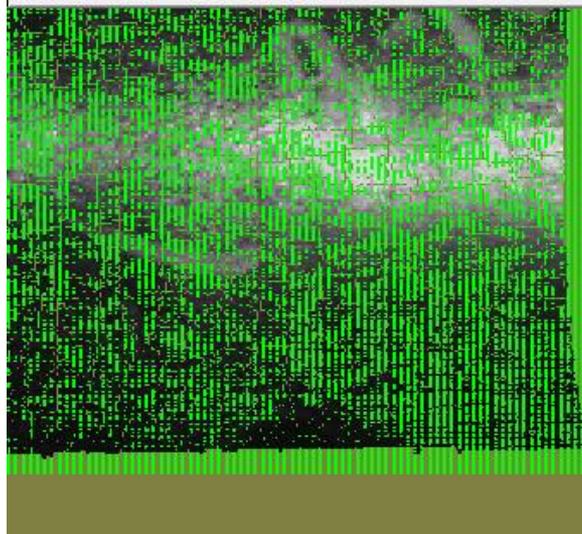
Longitudinal: 5.08 mm

Circumferential: 1.27 mm

Buttons: Save as default, Load default, Apply, Close

Export features: river bottom profile (depth) to disk

Open file after exporting



Pipe diameter: mm

Pipe thickness: 6.3500 mm

Display data in: mm Show fitted surface

Fitted radius: 44.65

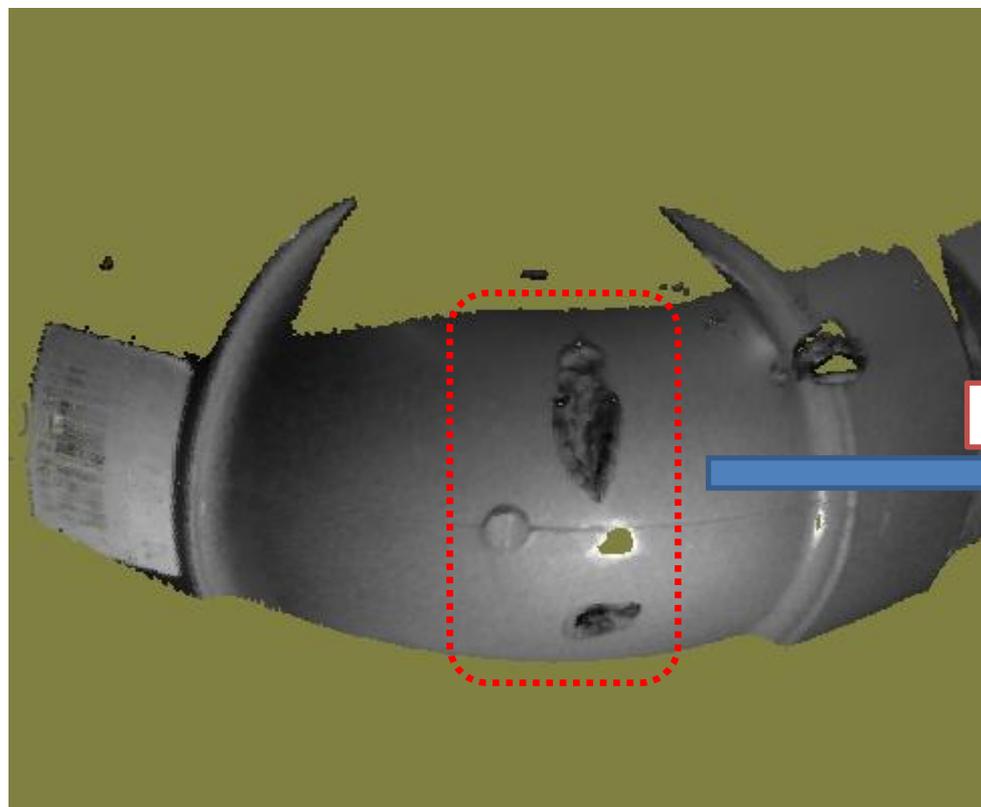
Feature	Max Depth	Area	Width	Length
1	3.59	1777.6340	63.50	32.50

この事例では、腐食箇所を正しく解析できていない。
【理由】比較的なだらかな腐食であるため

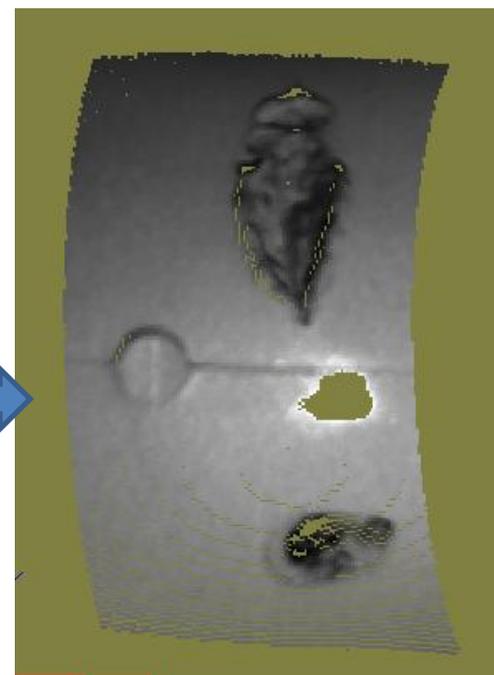
エルボーへの応用



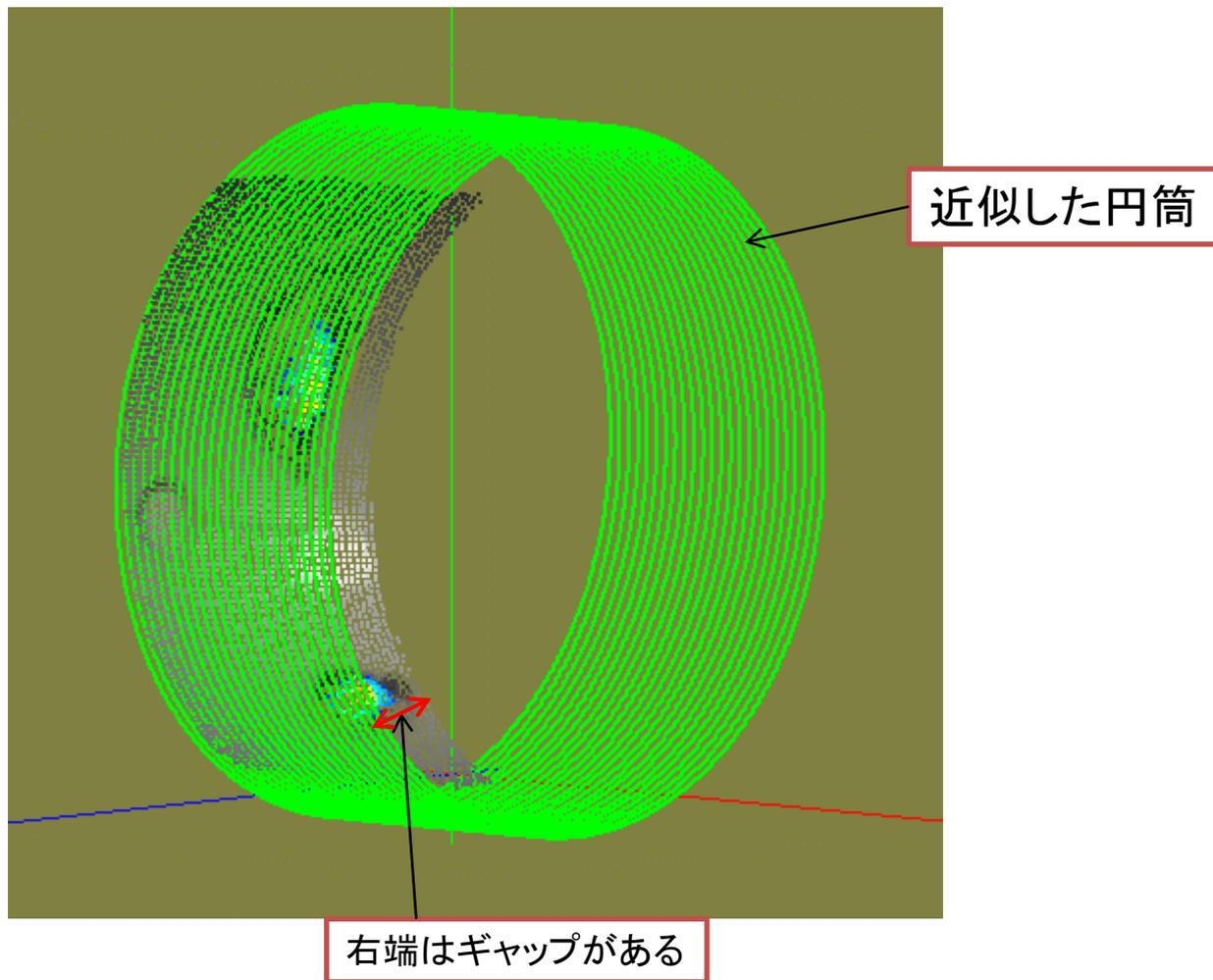
エルボ一部腐食の解析



切り出し



Local Analysis mode



腐食検出

右端のギャップは無視され、腐食のみ抽出される

Corrosion Analysis

Interaction Rules

Rule: ASME B31G

Depth Threshold: 5% Grid Size: None Feature Envelope: Contour

Minimum Feature Area: 20.6452 mm² Interaction Rule: Absolute

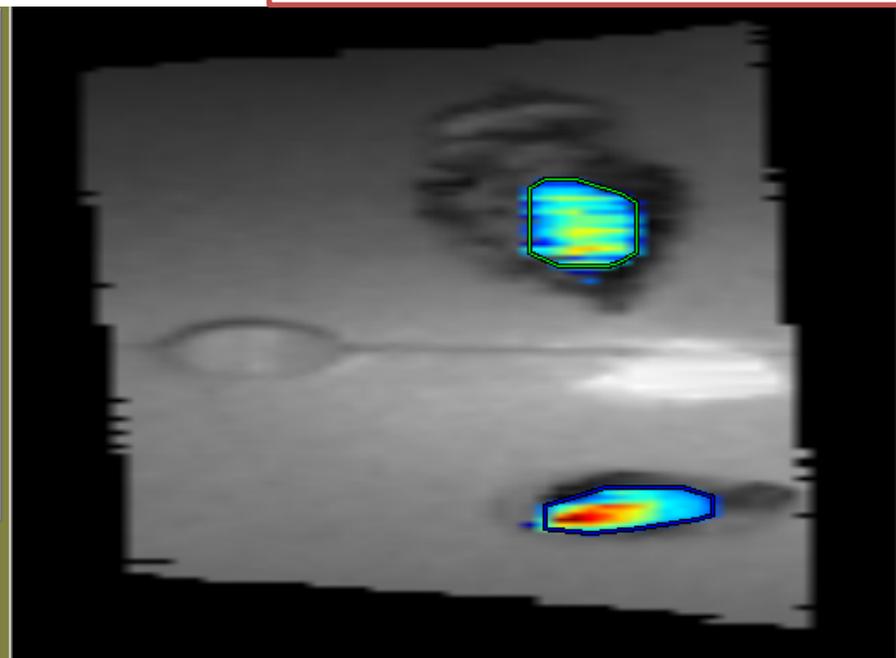
Longitudinal: 5.08 mm

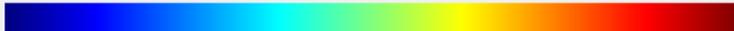
Circumferential: 1.27 mm

Save as default Load default Apply Close

Export features: river bottom profile (depth) to disk

Open file after exporting



0.03 mm  3.29 mm

Pipe diameter: mm

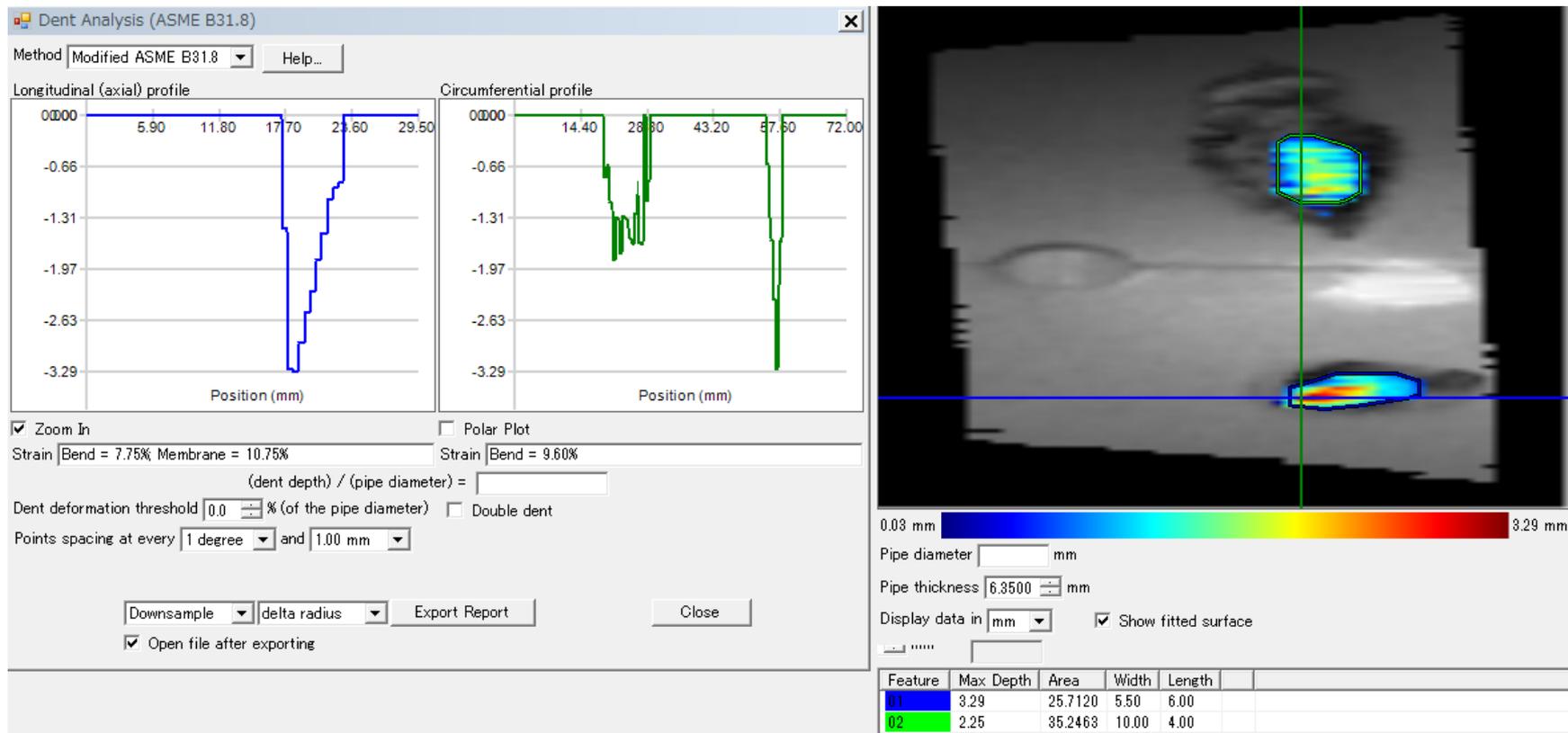
Pipe thickness: 6.9500 mm

Display data in: mm Show fitted surface

Fitted radius: 28.65

Feature	Max Depth	Area	Width	Length
01	3.29	25.7120	5.50	6.00
02	2.25	35.2463	10.00	4.00

断面グラフ



Global Analysis modeでは

