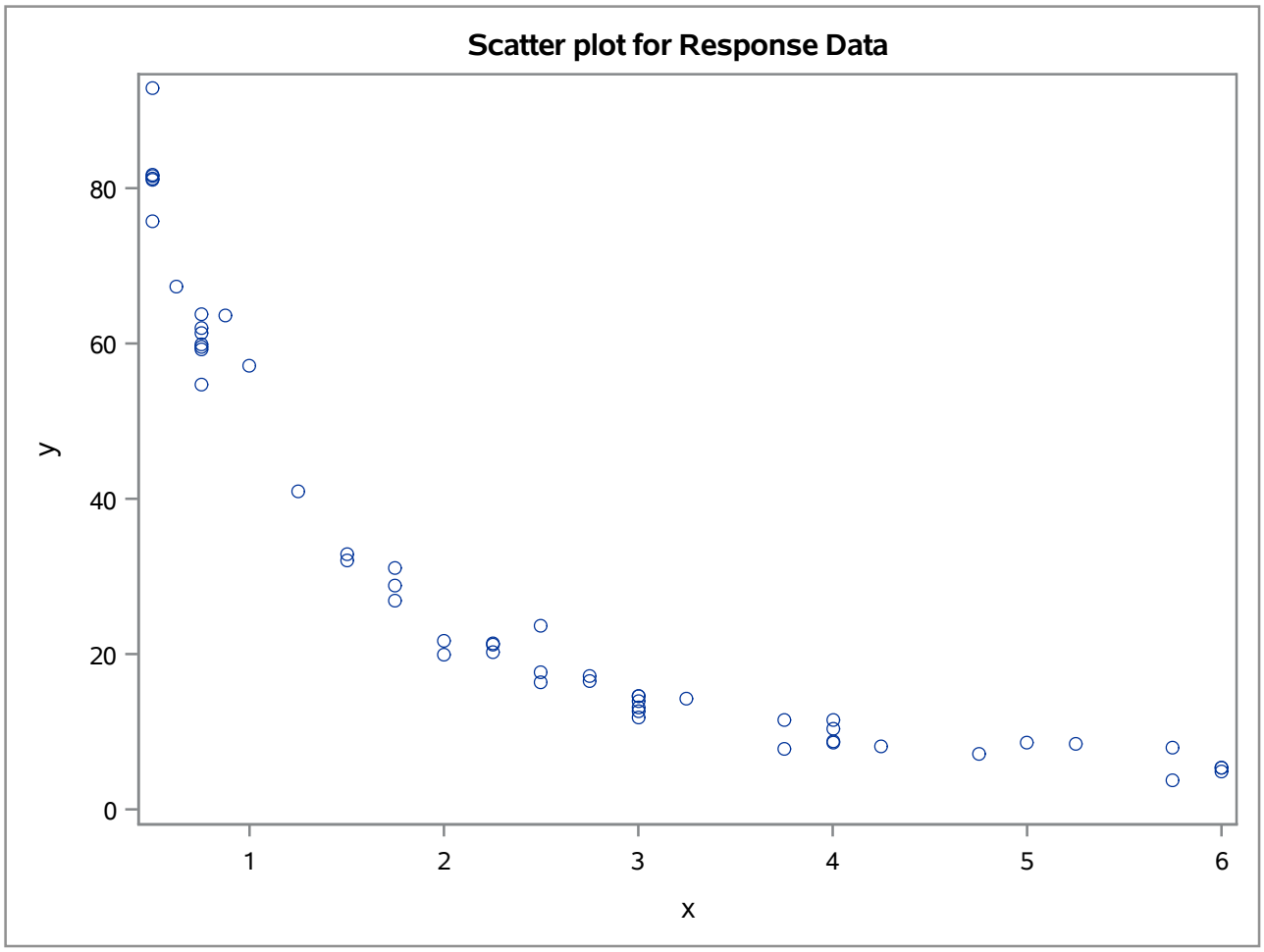

Scatter plot for Response Data
y
x
0
20
40
60
80
1
2
3
4
5
6

# NonLinear Regression Model [y = ae^(bx)] for Response Data

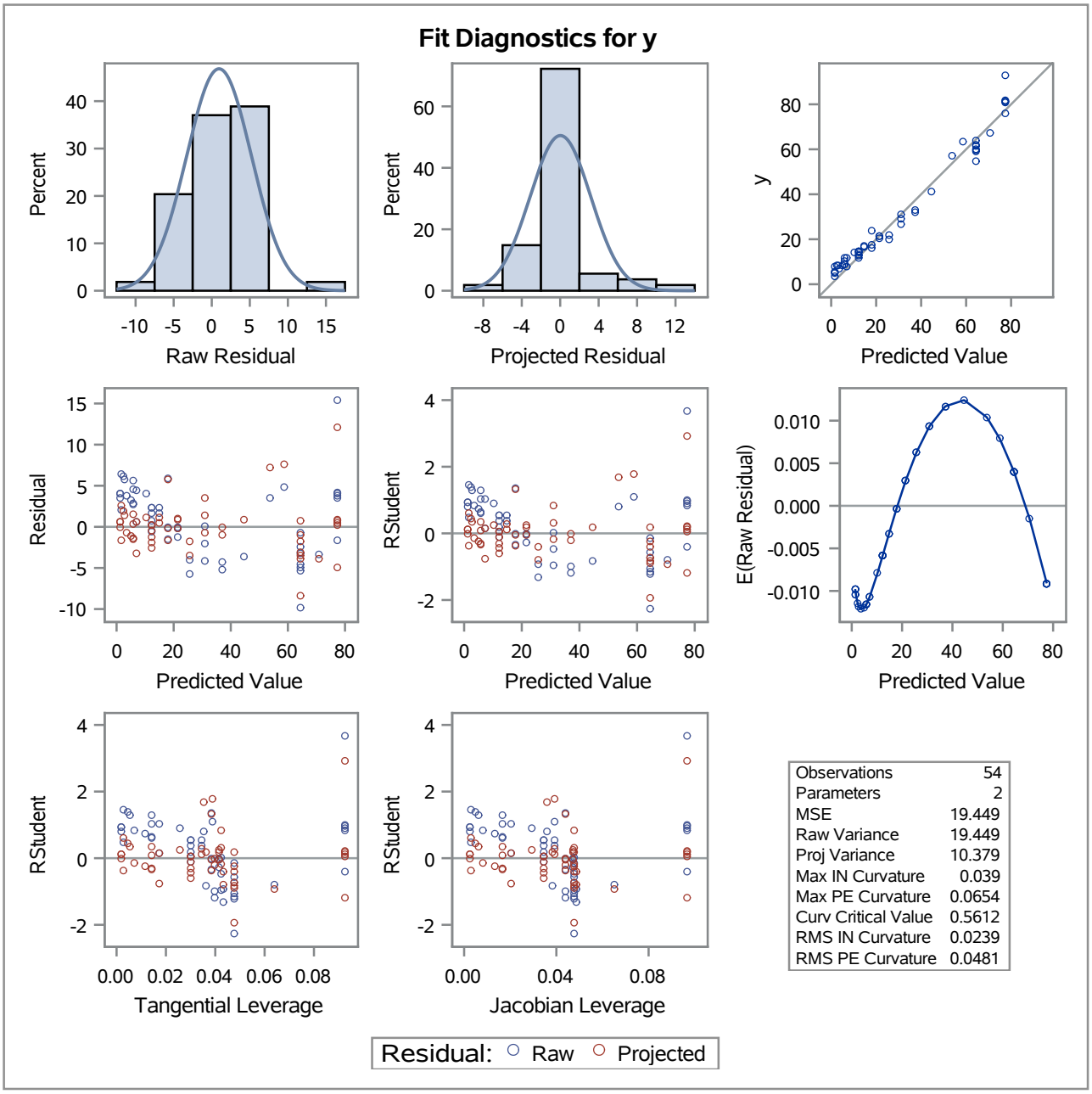
## The NLIN Procedure
## Dependent Variable y
## Method: Gauss-Newton

| Iterative Phase | | | |
|---|---|---|---|
| **Iter** | **a** | **b** | **Sum of Squares** |
| **0** | 80.0000 | -0.5000 | 3733.4 |
| **1** | 105.0 | -0.6910 | 1116.8 |
| **2** | 111.2 | -0.7290 | 1012.3 |
| **3** | 111.8 | -0.7344 | 1011.3 |
| **4** | 111.9 | -0.7351 | 1011.3 |
| **5** | 111.9 | -0.7352 | 1011.3 |
| **6** | 111.9 | -0.7352 | 1011.3 |

NOTE: Convergence criterion met.

# NonLinear Regression Model [y = ae^(bx)] for Response Data

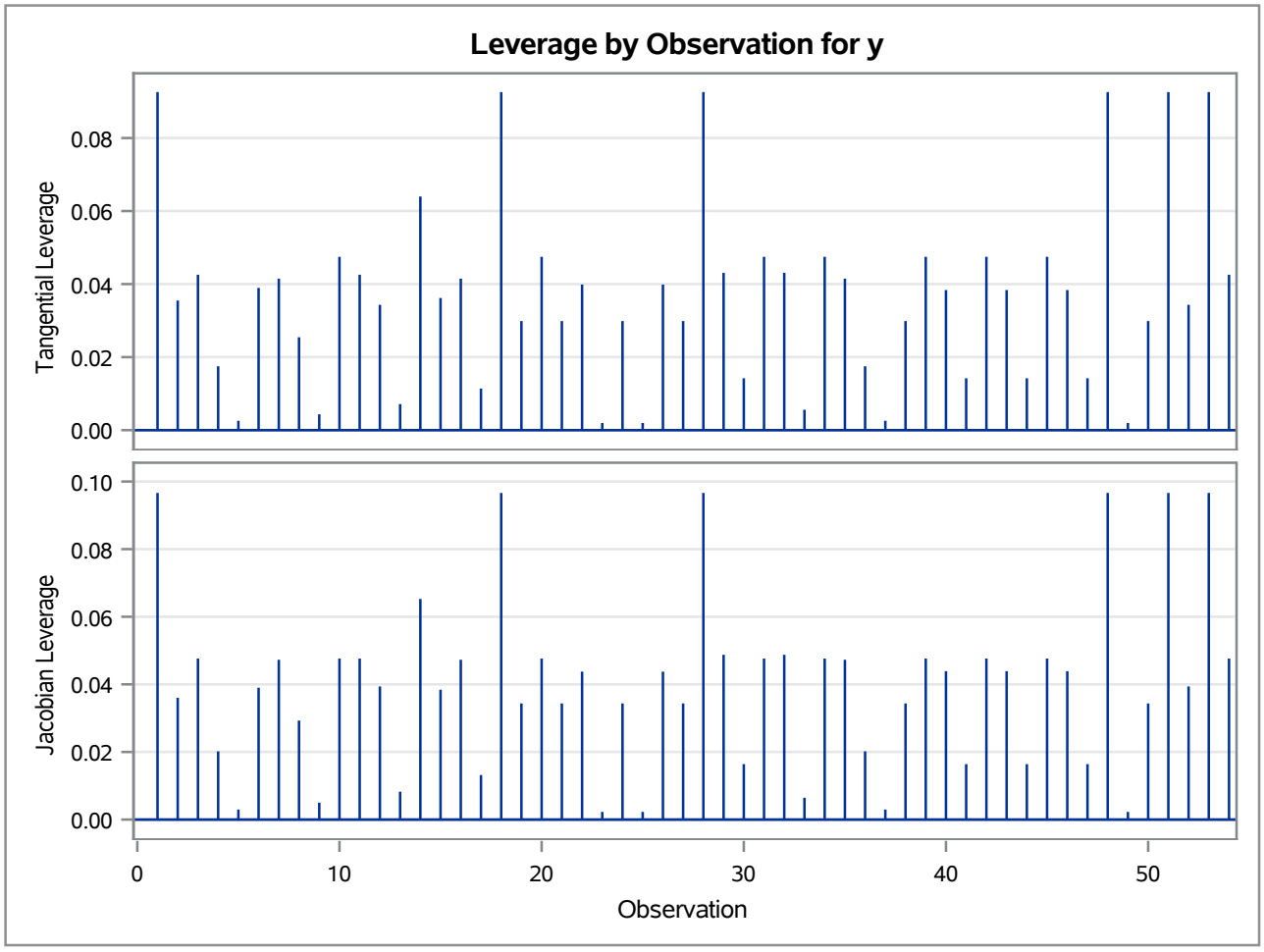
**The NLIN Procedure**
**Dependent Variable y**
**Method: Gauss-Newton**




| | |
|---|---|
| Observations | 54 |
| Parameters | 2 |
| MSE | 19.449 |
| Raw Variance | 19.449 |
| Proj Variance | 10.379 |
| Max IN Curvature | 0.039 |
| Max PE Curvature | 0.0654 |
| Curv Critical Value | 0.5612 |
| RMS IN Curvature | 0.0239 |
| RMS PE Curvature | 0.0481 |

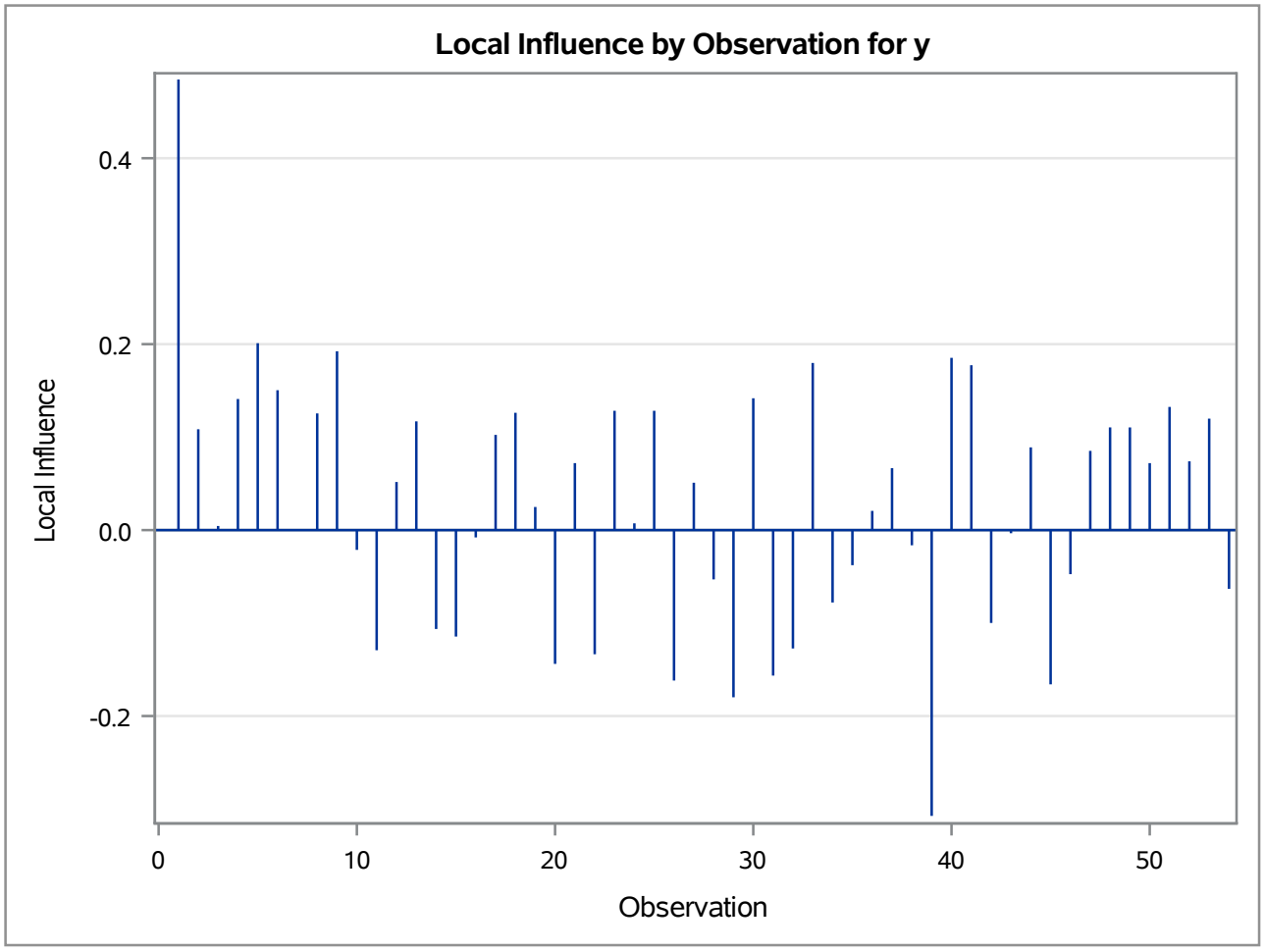
# NonLinear Regression Model [y = ae^(bx)] for Response Data

**The NLIN Procedure**
**Dependent Variable y**
**Method: Gauss-Newton**



# NonLinear Regression Model [y = ae^(bx)] for Response Data

**The NLIN Procedure**
**Dependent Variable y**
**Method: Gauss-Newton**




| Estimation Summary | |
|---|---|
| **Method** | Gauss-Newton |
| **Iterations** | 6 |
| **R** | 9.802E-6 |
| **PPC(b)** | 2.658E-6 |
| **RPC(b)** | 0.000019 |
| **Object** | 5.804E-9 |
| **Objective** | 1011.327 |
| **Observations Read** | 54 |
| **Observations Used** | 54 |
| **Observations Missing** | 0 |

# NonLinear Regression Model [y = ae^(bx)] for Response Data

## The NLIN Procedure

**Note:** An intercept was not specified for this model.

| Source | DF | Sum of Squares | Mean Square | F Value | Approx Pr > F |
|---|---|---|---|---|---|
| **Model** | 2 | 89484.3 | 44742.1 | 2300.53 | <.0001 |
| **Error** | 52 | 1011.3 | 19.4486 | | |
| **Uncorrected Total** | 54 | 90495.6 | | | |

| Parameter | Estimate | Approx Std Error | Approximate 95% Confidence Limits | |
|---|---|---|---|---|
| **a** | 111.9 | 3.0488 | 105.8 | 118.0 |
| **b** | -0.7352 | 0.0276 | -0.7907 | -0.6798 |

| Approximate Correlation Matrix | | |
|---|---|---|
| | **a** | **b** |
| **a** | 1.0000000 | -0.8409166 |
| **b** | -0.8409166 | 1.0000000 |

# NonLinear Regression Model [y = e^(ax)/(b + cx)] for Response Data

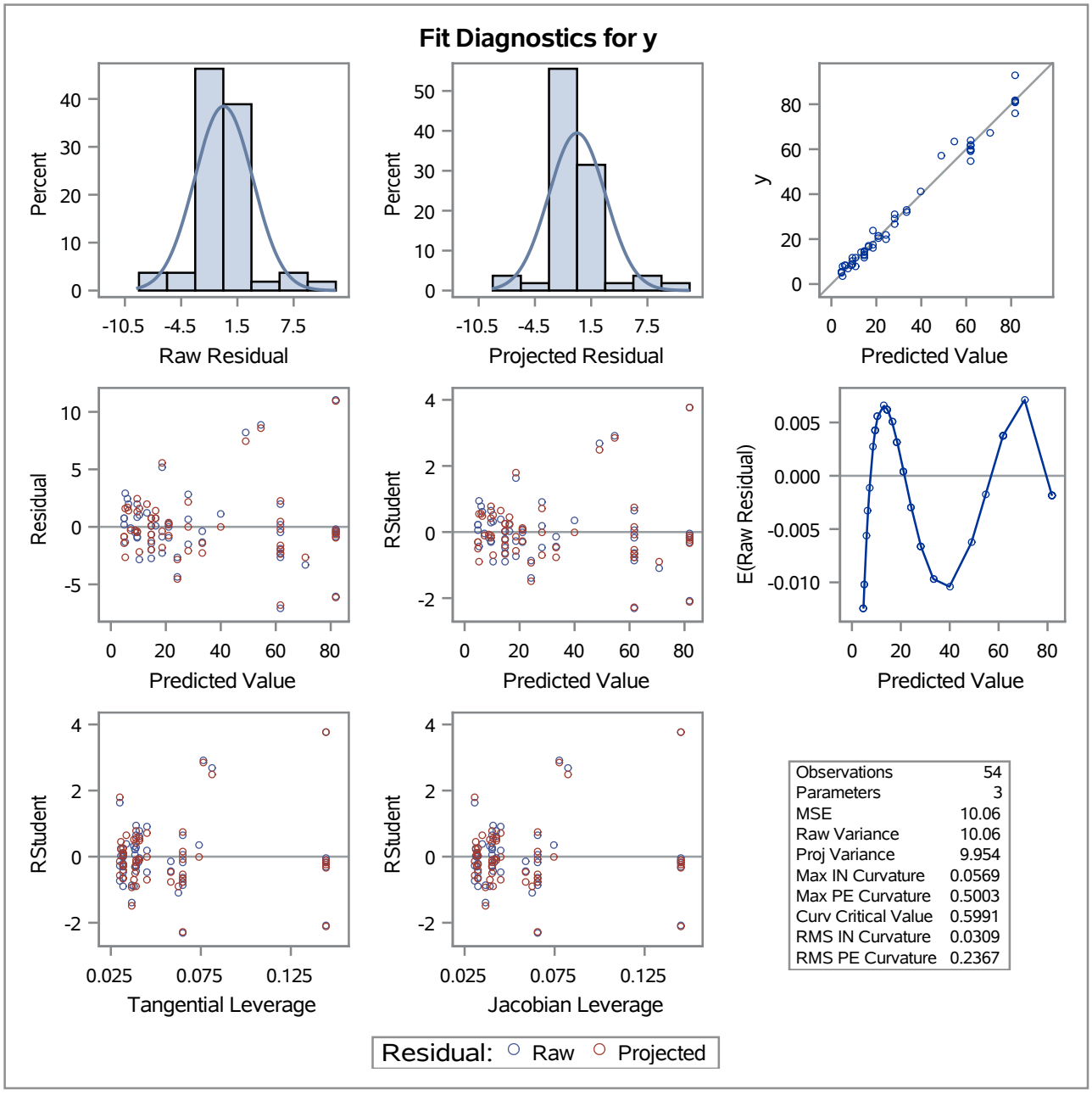
## The NLIN Procedure
## Dependent Variable y
## Method: Gauss-Newton

| Iterative Phase | | | | |
|---|---|---|---|---|
| Iter | a | b | c | Sum of Squares |
| 0 | 0.1000 | 0.1000 | 0.1000 | 72705.2 |
| 1 | 0.0880 | -0.00177 | 0.1015 | 51310.0 |
| 2 | -0.0305 | 0.0139 | 0.0196 | 18614.2 |
| 3 | -0.0656 | 0.00580 | 0.0183 | 4151.1 |
| 4 | -0.1607 | 0.00496 | 0.0112 | 1004.2 |
| 5 | -0.1656 | 0.00515 | 0.0121 | 515.1 |
| 6 | -0.1665 | 0.00516 | 0.0122 | 513.0 |
| 7 | -0.1666 | 0.00517 | 0.0122 | 513.0 |
| 8 | -0.1666 | 0.00517 | 0.0122 | 513.0 |

NOTE: Convergence criterion met.

# NonLinear Regression Model [y = e^(ax)/(b + cx)] for Response Data

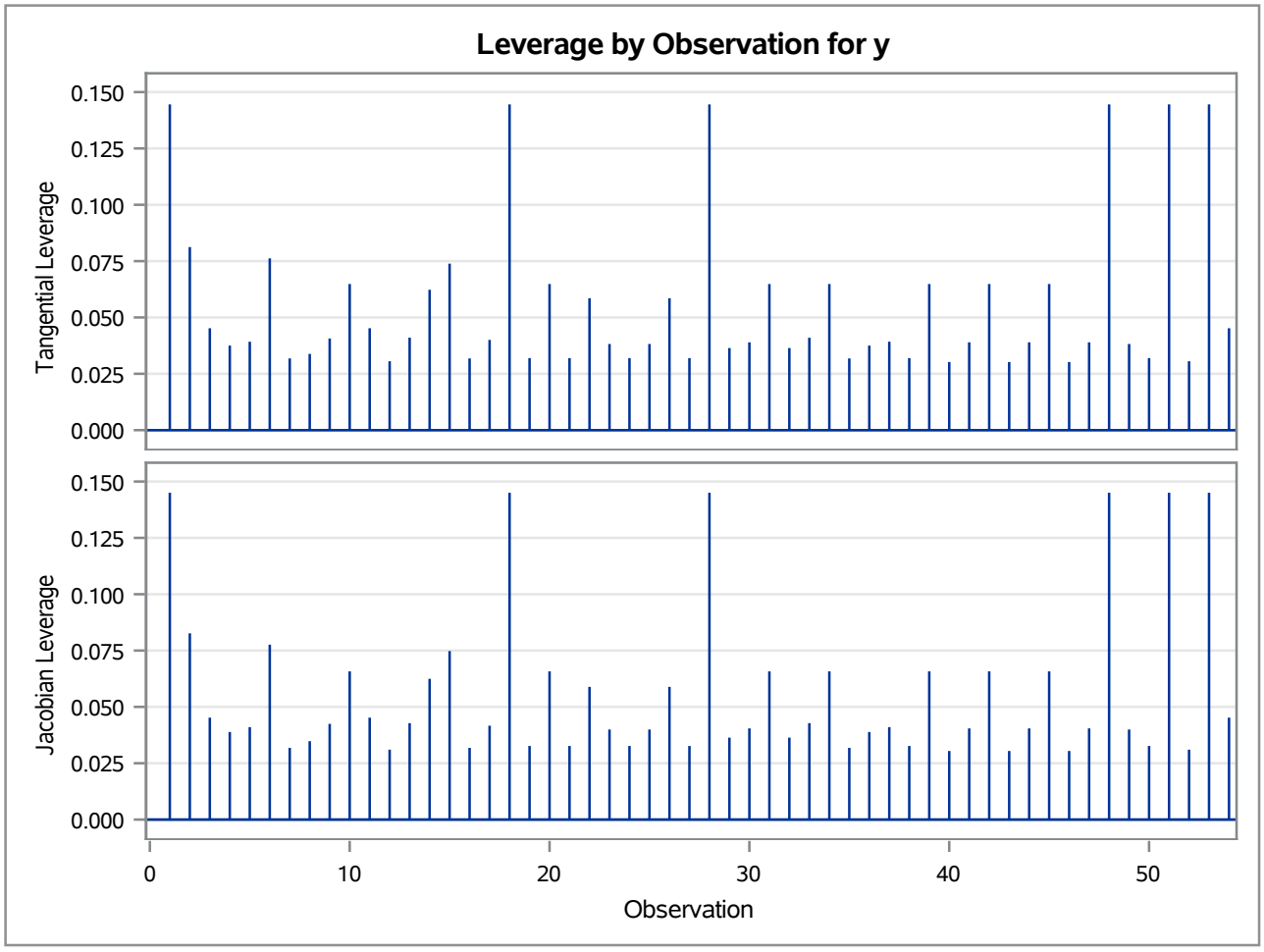
**The NLIN Procedure**
**Dependent Variable y**
**Method: Gauss-Newton**




| | |
|---|---|
| Observations | 54 |
| Parameters | 3 |
| MSE | 10.06 |
| Raw Variance | 10.06 |
| Proj Variance | 9.954 |
| Max IN Curvature | 0.0569 |
| Max PE Curvature | 0.5003 |
| Curv Critical Value | 0.5991 |
| RMS IN Curvature | 0.0309 |
| RMS PE Curvature | 0.2367 |

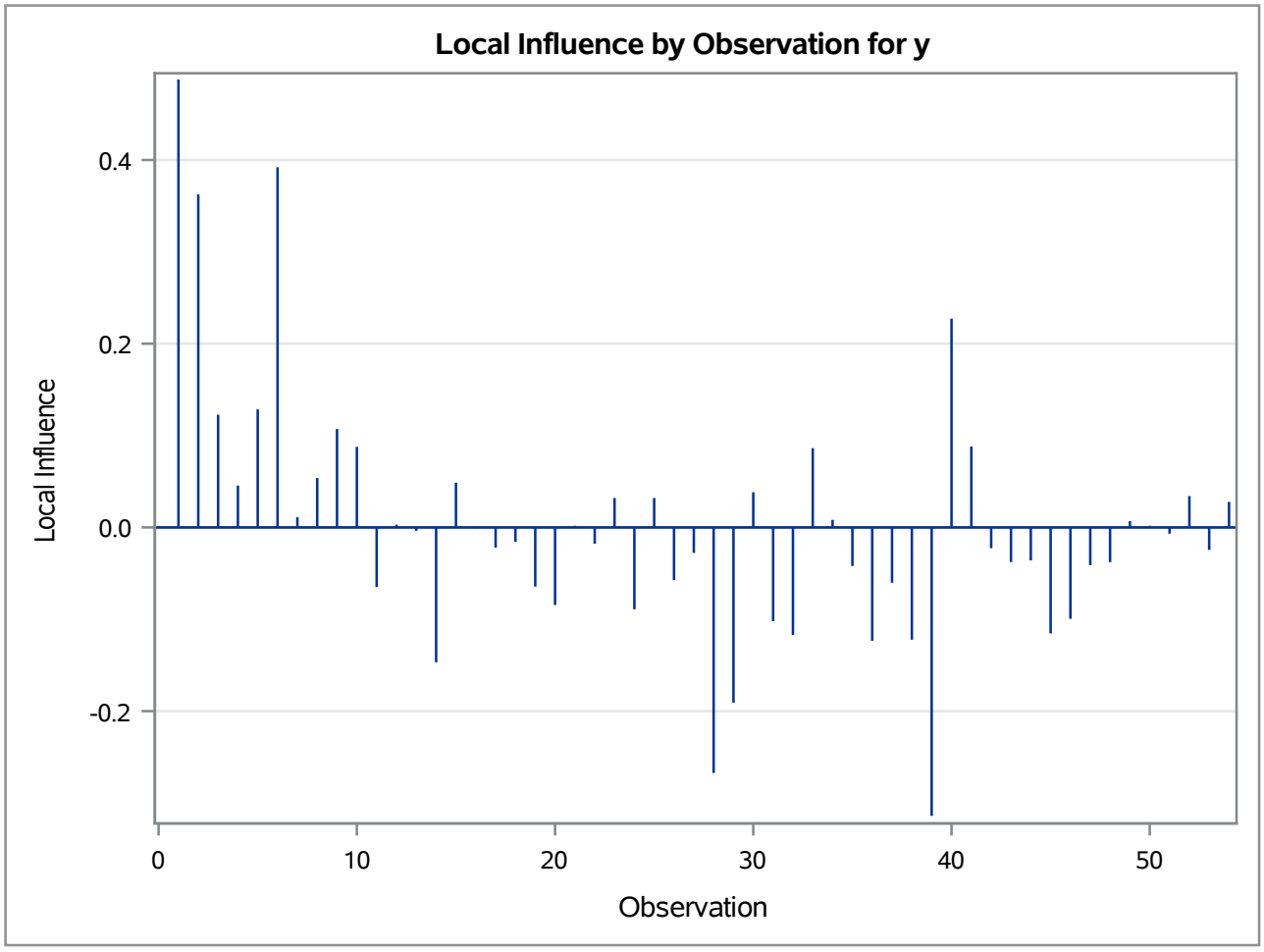
# NonLinear Regression Model [y = e^(ax)/(b + cx)] for Response Data

**The NLIN Procedure**
**Dependent Variable y**
**Method: Gauss-Newton**



# NonLinear Regression Model [y = e^(ax)/(b + cx)] for Response Data

**The NLIN Procedure**
**Dependent Variable y**
**Method: Gauss-Newton**




| Estimation Summary | |
|---|---|
| **Method** | Gauss-Newton |
| **Iterations** | 8 |
| **Subiterations** | 6 |
| **Average Subiterations** | 0.75 |
| **R** | 4.722E-7 |
| **PPC(a)** | 7.723E-7 |
| **RPC(a)** | 0.000017 |
| **Object** | 1.14E-10 |
| **Objective** | 513.048 |
| **Observations Read** | 54 |
| **Observations Used** | 54 |
| **Observations Missing** | 0 |

# NonLinear Regression Model [y = e^(ax)/(b + cx)] for Response Data

## The NLIN Procedure

**Note:** An intercept was not specified for this model.

| Source | DF | Sum of Squares | Mean Square | F Value | Approx Pr > F |
|---|---|---|---|---|---|
| **Model** | 3 | 89982.5 | 29994.2 | 2981.60 | <.0001 |
| **Error** | 51 | 513.0 | 10.0598 | | |
| **Uncorrected Total** | 54 | 90495.6 | | | |

| Parameter | Estimate | Approx Std Error | Approximate 95% Confidence Limits | |
|---|---|---|---|---|
| **a** | -0.1666 | 0.0383 | -0.2435 | -0.0897 |
| **b** | 0.00517 | 0.000666 | 0.00383 | 0.00650 |
| **c** | 0.0122 | 0.00153 | 0.00908 | 0.0152 |

| Approximate Correlation Matrix | | | |
|---|---|---|---|
| | **a** | **b** | **c** |
| **a** | 1.0000000 | -0.8441931 | 0.9397393 |
| **b** | -0.8441931 | 1.0000000 | -0.9620080 |
| **c** | 0.9397393 | -0.9620080 | 1.0000000 |

| ID | DOB | AGE | LENGHT_WORK | SALES_YR |
|---|---|---|---|---|
| 001 | 10/21/46 | 72 | 8 | $58,744 |
| 002 | 09/13/55 | 63 | 8 | $16,984 |
| 005 | 06/06/40 | 78 | 23 | $69,000 |
| 003 | 07/05/44 | 74 | 20 | $190,880 |
| 008 | 02/08/62 | 57 | 23 | $112,033 |
| 012 | 09/18/58 | 60 | 27 | $167,886 |
| 024 | 06/17/71 | 47 | 15 | $17,745 |
| 021 | 04/26/48 | 70 | 26 | $177,164 |
| 019 | 12/25/60 | 58 | 27 | $192,834 |
| 007 | 06/06/59 | 59 | 30 | $250,920 |