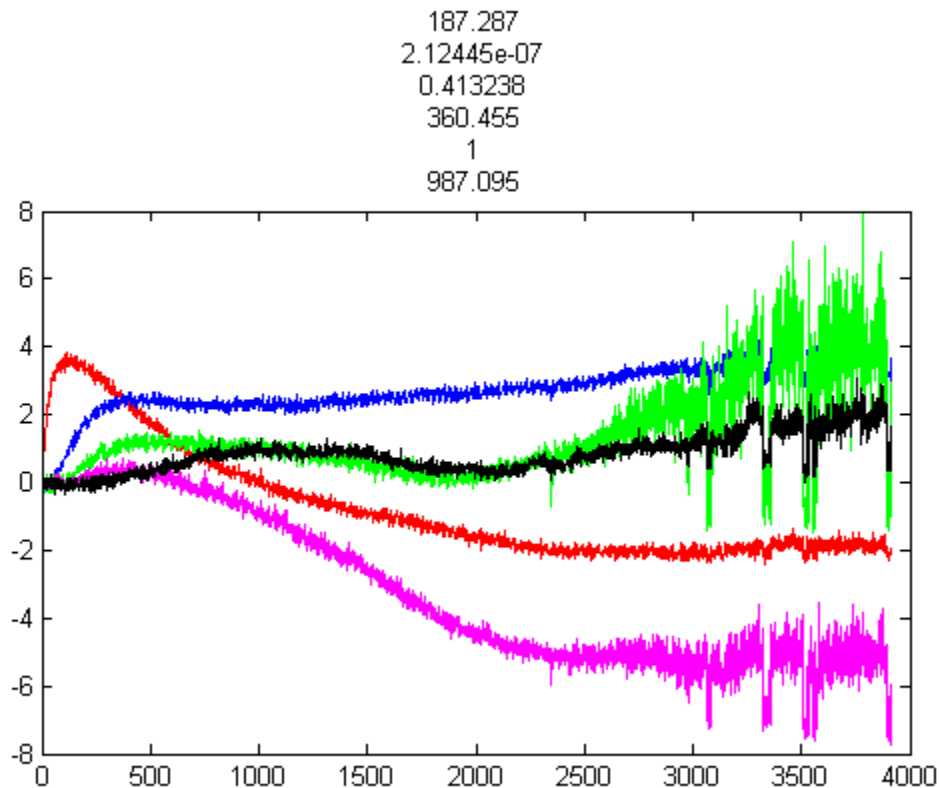


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```
[F, T] = transientFinDiffFuncNonLin(x, readings, tOffset, reading1, readingF, ...
    offsets2, amb1, Pin, eq, iceEnd, blackRod, moistRod);
```



## Calculate sum of errors squared.

```
errsum = sum(sum(F.^2))
```

```
errsum =
```

```
1.2364e+05
```

---

**Calculate error per degree of freedom. Since we have so many points we ignore the number of parameter values.**

```
errSumPer = errsum/(readingF-reading1)
```

```
errSumPer =
```

```
31.6207
```

**Calculate approximate uncertainty of each measurement.**

```
uncertainty = sqrt(errSumPer)
```

```
uncertainty =
```

```
5.6232
```

**Parameters of this fit: [k kclnner epslnner kcOuter epsOuter c]**

```
x
```

```
x =
```

```
187.2870    0.0000    0.4132   360.4545    1.0000   987.0955
```

**Plot results.**

```
colors = 'kbgprck';  
sensorPos = [1 6 9 12 19];  
factors = [1.79 1.81 1.53 1.46 2.06 2];  
offsets = [4.14 2.25 0.16 3.64 -0.35 0];
```

```
if(blackRod)  
    %shuffle sensors  
    factors = factors([2 3 5 4 1 6]);  
    offsets = offsets([2 3 5 4 1 6]);  
end
```

```
if(amb1)
```

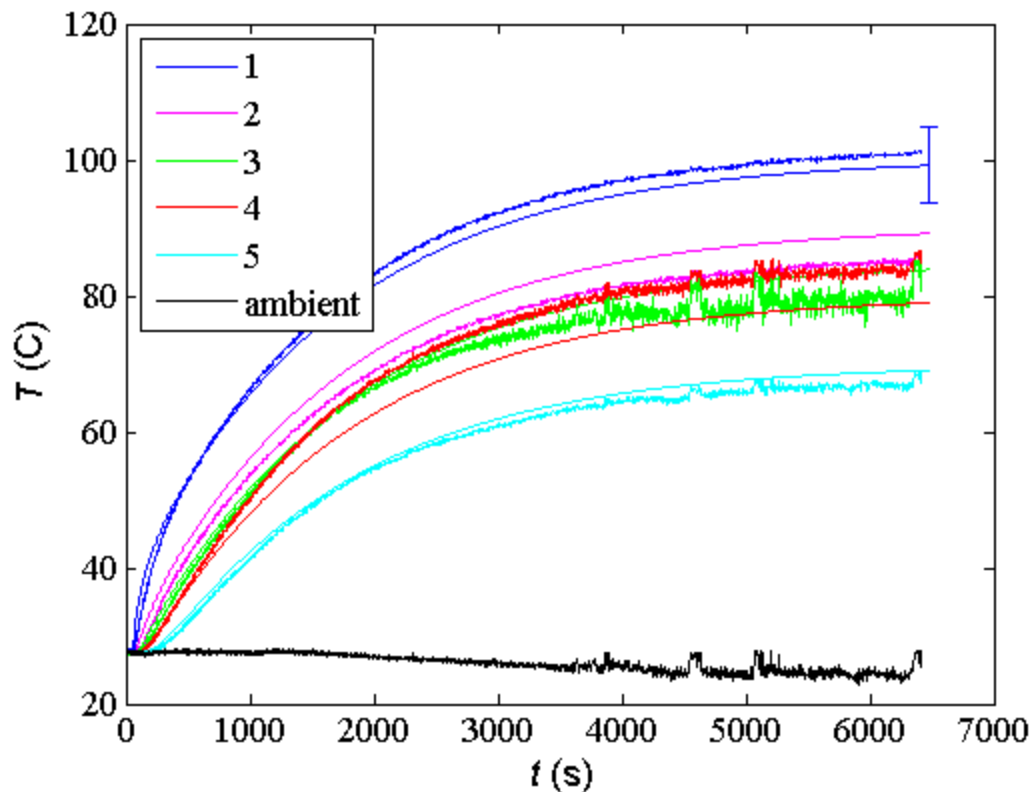
---

```

        factors = [2 factors(1:5)];
        offsets = [0 offsets(1:5)];
    end
    figure(2);
    hold off
    for i=1:6
        lines(i) = plot(squeeze(readings(3, i, :)), (squeeze(readings(1, i, :)) ...
            - offsets(i)) / factors(i) - offsets2(i), colors(i+1-amb1));
        hold on
        if(i < 6)
            plot((1:length(T(:, i)))+tOffset, T(:, sensorPos(i)), colors(i+1));
            if(i < 2); errorbar(length(T(:, i))+tOffset, T(length(T(:, i))), ...
                sensorPos(i), uncertainty); end;
        end
    end
    hold off;
    if(amb1)
        legend(lines, 'ambient', '1', '2', '3', '4', '5', 'Location', 'northwest');
    else
        legend(lines, '1', '2', '3', '4', '5', 'ambient', 'Location', 'northwest');
    end
    xlabel('\it t} (s)')
    ylabel('\it T} (C)')
    set(gca, 'FontSize', 14)
    set(gca, 'FontName', 'Times New Roman')

```

---



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