Pulse sequence editing by symbolic calculation — format control

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Formating of symbols An identifier s is interpreted as a decorated symbol by assigning an appropriate MATHEMATICA expression to `forpic[`s`]`. The following values are in the program files.

```
format[t1] = Subscript["t", "1"];
format[t2] = Subscript["t", "2"];
format[t3] = Subscript["t", "3"];
format[t4] = Subscript["t", "4"];
format[te] = Subscript["t", "e"];

format[taq] = "FID";
format[Delta1] = Subscript[format[Delta], "1"];
format[Delta] = Style["D", FontFamily -> Symbol];
format[tau] = Style["t", FontFamily -> Symbol];
format[taum] = Subscript[format[tau], "m"];
format[pi] = Style["p", FontFamily -> Symbol];
format[pi/2] = Style["p/2", FontFamily -> Symbol];
format[phi] = Style["f", FontFamily -> Symbol];
format[H1] = {Superscript["", "1"], "H"};
format[H2] = {Superscript["", "2"], "H"};
format[C13] = {Superscript["", "13"], "C"};
```

and correspondingly for N14, N15, O17, F19, Na23, P31, Cd113. Also

```
format[Gz] = Subscript["G", "z"];
format[J1HC] = {Superscript["", "1"], Subscript["J", "HC"]}
```

Users can type `format[`s`]` anywhere in a session. APSEQ interprets the symbol s accordingly in the subsequent labeling of diagrams.

Greek alphabet: APSEQ interprets the commonly used names for the lower case letters:, *i.e.* alpha, beta, chi, delta, epsilon, phi, gamma, eta, iota, phi, kappa, lambda, mu, nu, omicron, pi, theta, rho, sigma, tau, upsilon, omega, xi, psi, zeta.

Scaling: `scale` scales the non-text body of the diagrams. `fontScale` scales the labeling. The defaults are 1 and 0.8, respectively. The actual font size is 10 × `fontScale`.

Horizontal dimensions: The unscaled width of the depiction of a delay, spin lock, acquisition or other event, denoted by symbol s, that is not a `pulse`, is the current value of `forpic[`s`]`. The defaults are

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```
forpic[prep] := 5 ;
forpic[t]:= 80;
forpic[J] := 1/120;
forpic[te] = 30;
forpic[taq] := 70;
forpic[tf] := 45;
forpic[tail] := 20;
forpic[tg] := 30;
forpic[taum] := 80;
forpic[t1] := 80;
forpic[t2] := 60;
forpic[t3] := 70;
forpic[tGz] := 25;
forpic[d] = 25;
forpic[delta] = 25;
forpic[Delta] = 25;
```

Users can change these and make further `forpic` assignments. The width of the depiction of an n degree pulse is $n\times$`pwu`$/90$ where the unscaled default of `pwu` is 5. For example, when `scale` is 1, the depiction of a 90 degree pulse is 5 printer's points wide. APSEQ makes the horizontal distance

Vertical dimensions: The unscaled heights of pulses and the labels displayed between arrows are `pulseHeight`, which defaults to 40 points, and 3/4 of the current pulse height.

Gradient pulses: A gradient pulse is depicted by a semi-ellipse. The dimensions depend on the strength. This is the number in the gradientPulse item in the input, for example 10 when the item is `gradientPulse[10]`, and 5 when it is `gradientPulse[5 s]`. (The `s` suppresses the numerical label in the diagrams, when the exact value of the strength does not matter.) The horizontal semi-axis is `xaxisGz`. This defaults to 5 points. The vertical semi-axis is set tentatively to the strength times `gpHeightScale`, which defaults to 5. This product is truncated to `gpHeightCap`, which defaults to 40 points, if it is greater.

Channel spacing: This will be parameterized along with further features of the diagrams in the next version of APSEQ.