```
Get["QUADRUPOLE"];

(*
 One-dimensional two-pulse MQMAS of a spin I = 5/2,
 3 Q echo amplitude optimization with the second pulse,
 Coherence pathway 0 Q → 3 Q → -1 Q,
 Wolfram Mathematica 5.0,
 Author: R. HAJJAR
 *)

(*------------ Nucleus ------------*)
quadrupoleSpin = 2.5;
larmorFrequencyMhz = 208.61889974; (* Al-27 with 800 MHz NMR spectrometer *)

(*----- Quadrupole interaction ----*)
quadrupoleOrder = 2;
QCCMHz = 5;       η = 1;

(*--- Rotor Euler angles in PAS ---*)
αPR = 0;      βPR = 0;       γPR = 0;

(*----------- Parameters ----------*)
startOperator = Iz;
ωRFkHz = 100;     (* RF pulse strength in kHz unit *)
spinRatekHz = 15;
powderFile = "rep100_simp";
numberOfGammaAngles = 10;
t1 = 4;     (* the first-pulse duration in microsecond unit *)
t2 = 4;     (* the second-pulse duration in microsecond unit *)
Δt = 0.25;    (* pulse duration increment in microsecond unit *)
np = t2 / Δt;  (* number increment of the second-pulse duration *)

(*--------- Pulse sequence ---------*)
elements1 = {{2, 5}};  (* +3 Q matrix elements *)
detectelt = {{4, 3}}; (* central-transition matrix element of a spin 5/2 *)

fsimulation := (
  pulse[t1, ωRFkHz];     (* first pulse *)
  filterElt[elements1];  (* +3 Q coherence pathway selection *)

  acq0;
  For [p = 1, p ≤ np,  p++, {
     pulse[Δt, ωRFkHz];  (* second pulse *)
     acq[p];
   }];
 );

(*--- Execute, plot, and save simulation
  in "twoPulseEcho_P2" file -----------*)
run;
tabgraph["twoPulseEcho_P2"];

(* ------------------------------------ *)
```

Rang	t(μs)	intensity
0	0	0.
1	0.25	−0.000363950009
2	0.5	−0.00499505708
3	0.75	−0.01976461861
4	1.	−0.04467776548
5	1.25	−0.07168289018
6	1.5	−0.09013083809
7	1.75	−0.09369702292
8	2.	−0.08290107093
9	2.25	−0.06329618758
10	2.5	−0.0424713578
11	2.75	−0.02735990692
12	3.	−0.02197197813
13	3.25	−0.02636975038
14	3.5	−0.03751587491
15	3.75	−0.05096449132
16	4.	−0.06236774353