

Atom cooling by VSCPT: Accumulation plus filtering

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Abstract: We study laser cooling by velocity-selective coherent population trapping (VSCPT) in a double-?? scheme with decay beyond the working levels. We show that this additional decay channel filters diffused atoms from trapped ones and provides an ultrasharp atomic momentum distribution.

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References:

1. Alzetta, G., Gozzini, A., Moi, L., Orriols, G., (1976) *Nuovo Cimento B*, 36, p. 5
2. Dalton, B.J., Knight, P.L., (1983) *Laser Physics, Lecture Notes in Physics*, 182, p. 213. , ed. by J. D. Harvey and D. F. Walls, Springer, Berlin
3. Yoo, H.I., Eberly, J.H., (1985) *Phys. Rep.*, 118, p. 239
4. Arimondo, E., (1987) *Interaction of Radiation with Matter, Volume in Honor of Adriano Gozzini*, p. 343. , ed. by G. Alzetta, F. Bassani, and L. Radicati, Scuola Normale Superiore, Pisa
5. Agap'ev, B.D., Gornyi, M.B., Matisov, B.G., (1993) *Physics-Uspekhi*, 36, p. 763
6. Arimondo, E., (1996) *Progress in Optics*, 35, p. 257. , ed. by E. Wolf, Elsevier, Amsterdam
7. Aspect, A., Arimondo, E., Kaiser, R., Vansteenkiste, N., Cohen-Tannoudji, C., (1988) *Phys. Rev. Lett.*, 61, p. 826

8. Bardou, F., Saubamea, B., Lawall, J., Shimizu, K., ?mile, O., Westbrook, C., Aspect, A., Cohen-Tannoudji, C., (1994) C. R. Acad. Sci. Paris, S??rie II, 318, p. 877
9. Lawall, J., Bardou, F., Saubamea, B., Shimizu, K., Leduc, M., Aspect, A., Cohen-Tannoudji, C., (1994) Phys. Rev. Lett., 73, p. 1915
10. Doery, M.R., Widmer, M.T., Bellanca, M.J., Buell, W.F., Bergeman, T.H., Metcalf, H., Vredendregt, E.J.D., (1995) Phys. Rev. A, 52, p. 2295
11. Aspect, A., Arimondo, E., Kaiser, R., Vansteenkiste, N., Cohen-Tannoudji, C., (1989) J. Opt. Soc. Am. B, 6, p. 2112
12. Castin, Y., Wallis, H., Dalibard, J., (1989) J. Opt. Soc. Am. B, 6, p. 2046
13. Alekseev, V.Z., Krylova, D.D., (1992) JETP Lett., 55, p. 321
14. Alekseev, V.Z., Krylova, D.D., (1992) Laser Phys., 2, p. 781
15. Alekseev, V.Z., Krylova, D.D., (1993) Opt. Commun., 95, p. 319
16. Korsunsky, E.A., Kosachiov, D.V., Matisov, B.G., Rozhdestvensky, Yu.V., Windholz, L., Neureiter, C., (1993) Phys. Rev. A, 48, p. 1419
17. Bardou, F., Bouchaud, J.P., ?mile, O., Aspect, A., Cohen-Tannoudji, C., (1994) Phys. Rev. Lett., 72, p. 203
18. Doery, M.R., Gupta, R., Bergeman, T., Metcalf, H., Vredendregt, E.J.D., (1995) Phys. Rev. A, 51, p. 2334
19. Schaufler, S., Yakovlev, V.P., (1996) Laser Physics, 6, p. 414
20. Marte, P., Dum, R., Ta??eb, R., Zoller, P., Shahriar, M.S., Prentiss, M., (1994) Phys. Rev. A, 49, p. 4826
21. Shimizu, F., Shimizu, K., Takuma, H., (1987) Jap. J. Appl. Phys., 26, pp. L1847